An Essay Concerning Human Understanding

JOHN LOCKE
1632–1704

An Essay Concerning Human Understanding

The 1706 text

Rendered into modern English with AI (Claude) and edited



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An Essay Concerning Human Understanding · John Locke (1632–1704)

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INTRODUCTION

Where does everything we know come from? John Locke's answer in *An Essay Concerning Human Understanding* (1690), the founding work of British empiricism, is experience. The mind begins as "white paper, void of all characters," and every idea it will ever have comes from sensation or from reflection on its own workings.

Book I attacks the doctrine of innate ideas. Book II traces all our ideas, from colors and solidity to space, time, power, substance and personal identity, back to experience, and gives the famous distinction between primary and secondary qualities. Book III turns to language and the difference between nominal and real essences. Book IV asks how far knowledge reaches, and where belief, probability and faith must take over.

The right-hand column is Locke in modern English: the same arguments and examples, in sentences a reader today can move through easily. The left-hand column is Locke's own text.

Epistles; Book I: Of Innate Notions

The dedication and the Epistle to the Reader, then Locke's case that no principles or ideas are innate.

THE EPISTLE DEDICATORY: TO THE RIGHT HONOURABLE THOMAS, EARL OF PEMBROKE AND MONTGOMERY

Ded.1 My Lord,[1]

Ded.2 This treatise, which has grown up under your lordship's eye and has ventured into the world at your order, now comes to your lordship, by a natural kind of right, for the protection you promised it several years ago. It isn't that I think any name, however great, placed at the beginning of a book will be able to cover the faults to be found in it. Things in print must stand or fall by their own worth, or by the reader's fancy. But nothing is more to be desired for truth than a fair, unprejudiced hearing, and nobody is more likely to get me that than your lordship, who is acknowledged to have become intimately acquainted with her, even in her more hidden recesses. Your lordship is known to have carried your speculations in the most abstract and general knowledge of things so far beyond the ordinary reach and the common methods that your approval of the design of this treatise will at least keep it from being condemned without being read. It will also win a little weighing for those parts that might otherwise, perhaps, be thought to deserve no consideration because they are somewhat off the common road. The charge of novelty is a terrible one among those who

1 Thomas Herbert, 8th Earl of Pembroke (1656–1733), statesman, president of the Royal Society in 1689–90, and Locke's patron.

judge men's heads the way they judge their wigs, by the fashion, and who can allow nothing to be right except the received doctrines. Truth has hardly ever yet won the vote anywhere when it first appeared. New opinions are always suspected, and usually opposed for no other reason than that they are not already common. But truth, like gold, is no less itself for being newly brought out of the mine. It is trial and examination that must give it its value, not any antique fashion. And though it may not yet be current under the public stamp, it may for all that be as old as nature, and it is certainly no less genuine. Your lordship can give great and convincing examples of this whenever you choose to oblige the public with some of the large and comprehensive discoveries you have made of truths so far unknown, except to a few from whom your lordship has been pleased not to conceal them entirely. This alone would be reason enough, if there were no other, for me to dedicate this Essay to your lordship. As for its having some slight correspondence with parts of that nobler and vast system of the sciences of which your lordship has drawn so new, exact, and instructive an outline, I think it glory enough, if your lordship will let me boast of it, that here and there I have fallen into some thoughts not wholly different from yours. If your lordship thinks fit that this should appear in the world through your encouragement, I hope it may some day be a reason to lead your lordship further. And you will allow me to say that you are here giving the world a pledge of something that, if they can put up with this, will be truly worthy of their expectation. This, my lord, shows what kind of present I am making your lordship here. It is just the kind a poor man makes to his rich and great neighbor, who does not take the basket of flowers or fruit amiss, though he has more plenty of his own growing, and in much greater perfection. Worthless things acquire a value when they are made offerings of respect, esteem, and gratitude. You have given me such powerful and particular reasons to feel these for your lordship in the highest degree that, if they can add value to what they accompany in proportion to their own greatness, I can confidently boast that I

am here making your lordship the richest present you ever received. This much I am sure of: I am under the greatest obligation to seek every occasion to acknowledge a long train of favors I have received from your lordship. Those favors were great and important in themselves, and yet they were made much more so by the eagerness, concern, kindness, and other obliging circumstances that never failed to accompany them. To all this you are pleased to add something that gives still more weight and relish to all the rest: you are kind enough to keep me in some degree of your esteem, and to allow me a place in your good opinion. I had almost said your friendship. Your words and actions, my lord, show this so constantly and on all occasions, even to others when I am absent, that it is not vanity in me to mention what everybody knows. Rather, it would be bad manners not to acknowledge what so many witness, and what they tell me every day I owe to your lordship. I wish they could help my gratitude as easily as they convince me of the great and growing obligations it has to your lordship. This much I am sure of: I would be writing about the understanding without having any, if I were not extremely conscious of these obligations and did not seize this opportunity to testify to the world how much I am bound to be, and how much I am, my lord,

Ded.3 Your lordship's most humble and most obedient servant,
JOHN LOCKE.

Ded.4 *Dorset Court, May* 24, 1689.

THE EPISTLE TO THE READER

Locke tells how the Essay began among friends, and explains its method, its length and its aims.

Ep.1 Reader,

Ep.2 I here put into your hands what has been the diversion of some of my idle and heavy hours. If it has the good luck to prove a diversion for some of yours, and you take even half as much pleasure in reading it as I had in writing it, you will think your money as little wasted as I think my pains. Don't mistake this for

praise of my work. And don't conclude that, because I enjoyed doing it, I am foolishly taken with it now that it is done. Someone who hawks at larks and sparrows has no less sport, though a much less considerable quarry, than someone who flies his hawk at nobler game. The subject of this treatise is the understanding. Anyone who does not know that it is the most elevated faculty of the soul, and is therefore exercised with greater and more constant delight than any of the others, knows little of that subject. Its searches after truth are a sort of hawking and hunting in which the very pursuit makes up a great part of the pleasure. Every step the mind takes in its progress toward knowledge makes some discovery, which is not only new but also the best, for the time being at least.

Ep.3 For the understanding, like the eye, judges objects only by its own sight. So it cannot help being pleased with what it discovers, and it has less regret for what has escaped it, because that is unknown. Take someone who has raised himself above the alms-basket and is not content to live lazily on scraps of begged opinions, and who sets his own thoughts to work to find and follow truth. Whatever he comes upon, he will not miss the hunter's satisfaction. Every moment of his pursuit will reward his pains with some delight, and he will have reason to think his time not badly spent, even when he cannot boast much of any great acquisition.

Ep.4 This, reader, is the entertainment of those who let their own thoughts loose and follow them in writing. You should not envy them for it, since they give you the opportunity of a similar diversion, if you will use your own thoughts in reading. It is to those thoughts, if they are your own, that I submit myself. But if they are taken on trust from others, it matters little what they are, since they are not following truth but some meaner consideration. And it is not worth caring what someone says or thinks who says or thinks only as another directs him. If you judge for yourself, I know you will judge fairly, and then I shall not be harmed or offended, whatever your verdict. It is certain that there is nothing in this treatise of whose truth I am not fully per-

suaded. Yet I consider myself as liable to mistakes as I can think you are, and I know that this book must stand or fall with you, not by any opinion I have of it, but by your own. If you find little in it that is new or instructive to you, you should not blame me for that. It was not meant for those who had already mastered this subject and become thoroughly acquainted with their own understandings, but for my own instruction and the satisfaction of a few friends, who admitted that they had not considered it sufficiently. If it were fitting to trouble you with the history of this Essay, I would tell you that five or six friends were meeting in my room and discussing a subject very remote from this one. They quickly found themselves at a standstill because of the difficulties that arose on every side. After we had puzzled ourselves for a while without coming any nearer to resolving the doubts that perplexed us, it occurred to me that we were taking the wrong course. Before we set ourselves to inquiries of that kind, it was necessary to examine our own abilities and see what objects our understandings were, or were not, fitted to deal with. I proposed this to the company, who all readily agreed, and it was then settled that this should be our first inquiry. For our next meeting I wrote down some hasty and undigested thoughts on a subject I had never considered before, and these were the first beginning of this discourse. Having been begun in this way by chance, it was continued at others' urging. It was written in disconnected pieces, and after long intervals of neglect it was taken up again as my mood or circumstances permitted. At last, in a retirement where looking after my health gave me leisure, it was brought into the order you now see.

Ep.5 This interrupted way of writing may have caused, among other faults, two opposite ones: namely, that too little and too much may be said in it. If you find anything missing, I shall be glad that what I have written gives you some wish that I had gone further. If it seems too much to you, you must blame the subject. When I first put pen to paper, I thought all I would have to say on this matter could be contained in one sheet of paper. But the further I went, the wider my prospect became. New dis-

coveries kept leading me on, and so it grew imperceptibly to the bulk it now has. I won't deny that it might possibly be reduced to a narrower compass than it has, and that some parts of it might be shortened. It was written in snatches, with many long interruptions, and that way of writing is apt to cause some repetitions. But to confess the truth, I am now too lazy, or too busy, to make it shorter.

Ep.6 I am well aware how little I consult my own reputation here, when I knowingly let the book go out with a fault so apt to disgust the most judicious readers, who are always the most fastidious. But those who know that laziness is apt to be content with any excuse will pardon me if mine has prevailed with me here, where I think I have a very good one. So I will not plead in my defense that the same notion, seen in different respects, may be convenient or necessary for proving or illustrating several parts of the same discourse, and that this has happened in many parts of this one. Setting that aside, I will frankly admit that I have sometimes dwelt long on the same argument and expressed it in different ways, with a quite different purpose. I do not claim to publish this Essay for the instruction of men of large thoughts and quick understanding. To such masters of knowledge I declare myself a pupil. I therefore warn them in advance to expect nothing here but what has been spun out of my own coarse thoughts and is suited to men of my own size. Such men, perhaps, will not be displeased that I have taken some pains to make plain and familiar to their thoughts some truths that established prejudice, or the abstractness of the ideas themselves, might make difficult. Some objects need to be turned on every side. A notion may be new, as I confess some of these are to me, or off the ordinary road, as I suspect they will seem to others. Then a single simple view of it will not get it admitted into every understanding, or fix it there with a clear and lasting impression. There are few people, I believe, who have not noticed in themselves or others that something very obscure when put one way has been made very clear and intelligible by another way of expressing it. Yet afterward the mind

found little difference between the phrasings, and wondered why one failed to be understood more than the other. But not everything strikes every man's imagination alike. Our understandings differ no less than our palates. Someone who thinks the same truth will be equally relished by everyone in the same dress might as well hope to feast everyone with the same kind of cooking. The meat may be the same and the nourishment good, and yet not everyone may be able to take it with that seasoning. It must be prepared another way if you want it to go down with some people, even some of strong constitutions. The truth is that those who advised me to publish it advised me, for this reason, to publish it as it is. And since I have been brought to let it go out into the world, I want it to be understood by whoever takes the trouble to read it. I have so little desire to be in print that, if I did not flatter myself that this Essay might be of some use to others, as I think it has been to me, I would have kept it for the eyes of a few friends, who gave the first occasion for it. Since my appearing in print, then, is precisely in order to be as useful as I can, I think it necessary to make what I have to say as easy and intelligible to all sorts of readers as possible. I would much rather have speculative and quick-sighted readers complain that I am tedious in some parts than have anyone mistake or fail to grasp my meaning because he is unaccustomed to abstract speculations or already committed to different notions.

Ep.7 It will perhaps be condemned as a great piece of vanity or insolence in me to presume to instruct this knowing age of ours. And it comes to little less when I admit that I publish this Essay in the hope that it may be useful to others. But some writers, with a pretended modesty, condemn as useless what they themselves write. If I may speak freely of them, it seems to me that publishing a book for any other purpose smacks much more of vanity or insolence. Someone who prints something, and so expects people to read it, while not intending them to find anything useful in it for themselves or others, falls far short of the respect he owes the public. Even if nothing else in this treatise should be found acceptable, my purpose will not cease to be so;

and the goodness of my intention ought to be some excuse for the worthlessness of my gift. It is chiefly this that frees me from fear of criticism, which I do not expect to escape any more than better writers do. Men's principles, notions, and tastes are so different that it is hard to find a book that pleases or displeases everyone. I acknowledge that the age we live in is not the least knowing, and therefore not the easiest to satisfy. If I don't have the good luck to please, still nobody ought to be offended with me. I tell all my readers plainly, except half a dozen, that this treatise was not originally intended for them, and so they need not go to the trouble of being among its readers. Still, if anyone sees fit to be angry and rail at it, he may do so safely, for I shall find some better way of spending my time than in that sort of conversation. I shall always have the satisfaction of having aimed sincerely at truth and usefulness, though in one of the humblest ways.

THE UNDER-LABORER

Locke casts himself as an under-laborer clearing away the rubbish of learned jargon.

The commonwealth of learning is not without its master builders at present, and their mighty designs for advancing the sciences will leave lasting monuments for posterity to admire. But not everyone can hope to be a Boyle or a Sydenham. And in an age that produces such masters as the great Huygens and the incomparable Mr. Newton, along with some others of that kind, it is ambition enough to be employed as an under-laborer in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge.[2] That knowledge would certainly have advanced much further in the world if the efforts of ingenious and industrious men had not been heavily

2 Robert Boyle (1627–1691), chemist and natural philosopher; Thomas Sydenham (1624–1689), physician and Locke's collaborator; Christiaan Huygens (1629–1695), Dutch mathematician and physicist; Isaac Newton, whose *Principia* had appeared in 1687.

encumbered by the learned but frivolous use of uncouth, affected, or unintelligible terms. These terms were introduced into the sciences and made into an art there, to such a degree that philosophy, which is nothing but the true knowledge of things, was thought unfit, or incapable, to be brought into well-bred company and polite conversation. Vague and meaningless forms of speech, and the abuse of language, have passed for mysteries of science for so long, and hard and misapplied words with little or no meaning have by long custom acquired such a right to be mistaken for deep learning and lofty speculation, that it will not be easy to persuade anyone that they are only covers for ignorance and hindrances to true knowledge. That goes both for those who speak them and for those who hear them. To break into the sanctuary of vanity and ignorance will, I suppose, be some service to human understanding. Yet few people are inclined to think that they deceive or are deceived in their use of words, or that the language of their own sect has any faults that ought to be examined or corrected. So I hope I shall be pardoned if in the third book I have dwelt long on this subject. I have tried to make it so plain that neither the deep roots of the mischief nor the prevalence of the fashion will be any excuse for those who will not take care about the meaning of their own words, and will not allow the significance of their expressions to be inquired into.

NOTES ON LATER EDITIONS

Locke describes the changes in the second, fourth and sixth editions, including clear and distinct versus determined ideas.

Ep.8 I have been told that a short abridgment of this treatise, printed in 1688, was condemned by some without being read, because it denied innate ideas. They concluded too hastily that, if innate ideas were not supposed, little would be left of either the notion or the proof of spirits. If anyone takes similar offense at the opening of this treatise, I would ask him to read it through. Then I hope he will be convinced that taking away false

foundations is not to the prejudice but to the advantage of truth. Truth is never so much injured or endangered as when it is mixed with falsehood or built on it. In the second edition I added the following:[3]

Ep.9 The bookseller will not forgive me if I say nothing about this second edition. He has promised that its correctness will make amends for the many errors committed in the first. He also wants it known that it has one entirely new chapter on identity, and many additions and corrections in other places. These, I must tell my reader, are not all new matter. Most of them are either further confirmations of what I had said, or explanations to keep others from mistaking the sense of what was printed before. They are not any change of mind on my part. I must make one exception: the alterations I have made in Book II, Chapter 21.

Ep.10 What I had written there about liberty and the will seemed to me to deserve as careful a review as I was capable of. In every age those subjects have occupied the learned part of the world with questions and difficulties that have greatly perplexed morality and theology, the branches of knowledge in which people are most concerned to be clear. On a closer inspection of the workings of men's minds, and a stricter examination of the motives and views that move them, I have found reason to alter somewhat my former thoughts about what gives the final determination to the will in all voluntary actions. I cannot help acknowledging this to the world as freely and readily as I first published what then seemed right to me. When truth appears against an opinion of my own, I think I have more reason to give it up and renounce it than to oppose someone else's opinion. For it is truth alone that I seek, and it will always be welcome to me, whenever it comes and wherever it comes from.

Ep.11 But however ready I am to give up any opinion I hold, or to retract anything I have written, at the first evidence of an error in it, I must admit this. I have not had the good luck to

3 The French abridgment of the Essay published by Jean Le Clerc in his *Bibliothèque universelle et historique* (1688).

receive any light from the objections I have seen in print against any part of my book. Nor have I found reason, in anything urged against it, to change my view on any of the points that have been questioned. Perhaps the subject I am dealing with often demands more thought and attention than cursory readers, or at least prejudiced ones, are willing to give. Or perhaps some obscurity in my expression casts a cloud over it, so that my way of treating these notions makes them hard for others to grasp. Either way, I find that my meaning is often mistaken, and I do not have the good luck to be rightly understood everywhere. There are so many instances of this that I think it only fair to my reader and myself to conclude one of two things. Either my book is written plainly enough to be rightly understood by those who read it with the attention and impartiality that anyone who takes the trouble to read ought to bring to reading, or else I have written it so obscurely that it is useless to try to mend it. Whichever of these is the truth, I alone am affected by it. So I shall be far from troubling my reader with what I think might be said in answer to the various objections I have met with to passages here and there in my book. Anyone who thinks those objections important enough to care whether they are true or false will, I am persuaded, be able to see that what is said is either not well founded, or else not contrary to my doctrine, once my opponent and I are both properly understood.

Ep.12 If some people, anxious that none of their good thoughts should be lost, have published their criticisms of my Essay, doing it the honor of not allowing it to remain an essay, I leave it to the public to value the debt it owes to their critical pens. I shall not waste my reader's time in so idle or ill-natured an occupation as lessening the satisfaction that anyone takes in himself, or gives to others, by so hasty a refutation of what I have written.

Ep.13 When the booksellers were preparing the fourth edition of my Essay, they let me know, so that I might make any additions or alterations I thought fit, if I had the leisure. I then thought it proper to inform the reader that, besides several cor-

rections I had made here and there, there was one alteration that needed mentioning, because it ran through the whole book and it matters that it be rightly understood. What I said on that occasion was this:

Ep.14 Clear and distinct ideas are terms that are familiar and frequently on people's lips. Yet I have reason to think that not everyone who uses them perfectly understands them. Perhaps only one here and there takes the trouble to consider them far enough to know what he himself or others precisely mean by them. So in most places I have chosen to put determinate or determined instead of clear and distinct, as more likely to direct people's thoughts to my meaning in this matter. By those terms I mean some object in the mind, and consequently determined, that is, such as it is seen and perceived to be there. This, I think, may properly be called a determinate or determined idea when, such as it is at any time objectively in the mind, and so determined there, it is attached, and determined without variation, to a name or articulate sound. That name or sound is to be steadily the sign of that very same object of the mind, or determinate idea.

Ep.15 To explain this a little more specifically. By determinate, when applied to a simple idea, I mean the simple appearance that the mind has in view, or perceives in itself, when that idea is said to be in it. By determinate, when applied to a complex idea, I mean one that consists of a determinate number of certain simple or less complex ideas, joined in the proportion and arrangement that the mind has before its view and sees in itself when that idea is present in it, or should be present in it when a man gives it a name. I say should be, because not everyone, perhaps not anyone, is so careful of his language as to use no word until he views in his mind the precise determined idea that he decides to make it the sign of. The lack of this is the cause of no small obscurity and confusion in men's thoughts and discussions.

Ep.16 I know that no language has enough words to match all the variety of ideas that enter into men's discussions and reason-

ings. But this does not prevent someone who uses any term from having in his mind a determined idea that he makes it the sign of, and to which he should keep it steadily attached for the whole of that discussion. Where he does not or cannot do this, it is useless for him to claim clear or distinct ideas: his plainly are not so. And so nothing can be expected but obscurity and confusion wherever terms are used that have no such precise determination.

Ep.17 On this ground I have thought determined ideas a way of speaking less liable to mistakes than clear and distinct. Where men have acquired such determined ideas of everything they reason, inquire, or argue about, they will find a great part of their doubts and disputes at an end. Most of the questions and controversies that perplex mankind depend on the doubtful and uncertain use of words, or (which is the same thing) on the undetermined ideas that the words are made to stand for. So I have chosen these terms to signify: 1. some immediate object of the mind, which it perceives and has before it, distinct from the sound it uses as a sign of it; 2. that this idea, thus determined (that is, the one the mind has in itself and knows and sees there), be tied without any change to that name, and that name tied to that precise idea. If men had such determined ideas in their inquiries and discussions, they would both see how far their own inquiries and discussions went and avoid most of the disputes and wrangling they have with others.

Ep.18 Besides this, the bookseller will think it necessary for me to inform the reader that two entirely new chapters have been added: one on the association of ideas, the other on enthusiasm. These, together with some other larger additions never printed before, he has undertaken to print separately, in the same way and for the same purpose as was done when this Essay had its second printing.[4]

Ep.19 In the sixth edition very little has been added or altered. Most of what is new is in the twenty-first chapter of the second

4 By "enthusiasm" (4.19) Locke means claims to private divine inspiration or revelation, not mere eagerness; the chapter on the association of ideas is 2.33.

book, which anyone who thinks it worthwhile can copy into the margin of the previous edition with very little labor.

INTRODUCTION

Locke sets out his purpose: to inquire into the origin, certainty and extent of human knowledge.

1.1.1 *An inquiry into the understanding, pleasant and useful.*—It is the understanding that sets man above the rest of sentient beings and gives him all the advantage and dominion he has over them. So it is certainly a subject worth the labor of inquiring into, if only because of its nobility. The understanding is like the eye: it makes us see and perceive all other things, but it takes no notice of itself. It takes skill and effort to set it at a distance and make it its own object. But whatever difficulties lie in the way of this inquiry, and whatever it is that keeps us so much in the dark about ourselves, I am sure of this. All the light we can let in on our own minds, and all the acquaintance we can make with our own understandings, will not only be very pleasant but will also bring us great advantage in directing our thoughts in the search for other things.

1.1.2 *Design.*—My purpose, then, is to inquire into the origin, certainty, and extent of human knowledge, together with the grounds and degrees of belief, opinion, and assent. I shall not at present meddle with the physical consideration of the mind. Nor shall I trouble myself to examine what its essence consists in, or by what motions of our spirits or alterations of our bodies we come to have any sensation by our organs, or any ideas in our understandings, or whether those ideas, any or all of them, depend on matter in their formation. These are speculations that I shall decline, however curious and entertaining they may be, as lying outside my way in the project I am now engaged in. It will be enough for my present purpose to consider the discerning faculties of a man as they are employed about the objects they have to deal with. And I shall think I have not entirely wasted my efforts in the thoughts I have on this occa-

sion if, in this historical, plain method, I can give some account of the ways by which our understandings come to attain the notions of things we have, and can set down some measures of the certainty of our knowledge, or of the grounds of the persuasions found among men. Those persuasions are so various, so different, and so wholly contradictory, and yet are asserted somewhere or other with such assurance and confidence, that anyone who surveys the opinions of mankind may perhaps have reason to suspect either that there is no such thing as truth at all, or that mankind has no adequate means of attaining certain knowledge of it. He has only to observe how these opinions oppose each other, and at the same time to consider the fondness and devotion with which they are embraced and the resolution and eagerness with which they are maintained.

1.1.3 *Method*.—It is therefore worthwhile to search out the boundaries between opinion and knowledge, and to examine by what measures we ought to regulate our assent and moderate our persuasions in things of which we have no certain knowledge. To this end I shall pursue the following method.

First, I shall inquire into the origin of those ideas, notions, or whatever else you please to call them, which a man observes and is conscious to himself that he has in his mind; and into the ways by which the understanding comes to be furnished with them.

Second, I shall try to show what knowledge the understanding has by those ideas, and the certainty, evidence, and extent of that knowledge.

Third, I shall make some inquiry into the nature and grounds of faith or opinion. By this I mean the assent we give to any proposition as true when we still have no certain knowledge of its truth. And here we shall have occasion to examine the reasons and degrees of assent.

1.1.4 *Useful to know the extent of our comprehension*.—By this inquiry into the nature of the understanding I may be able to discover its powers: how far they reach, to what things they are in any degree proportioned, and where they fail us. If I can, I

suppose it may be of use in persuading the busy mind of man to be more cautious in meddling with things beyond its comprehension. It may persuade the mind to stop when it is at the utmost extent of its tether, and to sit down in a quiet ignorance of those things that are found on examination to be beyond the reach of our capacities. Then, perhaps, we would not be so quick to raise questions out of a pretension to universal knowledge. We would not perplex ourselves and others with disputes about things our understandings are not suited to, of which we cannot frame any clear or distinct perceptions in our minds, or of which (as has perhaps happened too often) we have no notions at all. If we can find out how far the understanding can extend its views, how far it has faculties to attain certainty, and in what cases it can only judge and guess, we may learn to content ourselves with what is attainable by us in this state.

1.1.5 *Our capacity suited to our state and concerns*.—For though the comprehension of our understandings falls exceedingly short of the vast extent of things, we shall still have cause enough to praise the bountiful Author of our being for the proportion and degree of knowledge he has bestowed on us, so far above all the other inhabitants of this dwelling of ours. Men have reason to be well satisfied with what God has thought fit for them. For he has given them (as St. Peter says) πάντα πρὸς ζωὴν καὶ εὐσέβειαν, whatever is necessary for the conveniences of life and the knowledge of virtue. And he has put within reach of their discovery comfortable provision for this life and the way that leads to a better one. However far their knowledge may fall short of a universal or perfect comprehension of whatever exists, it still secures their great concerns: they have light enough to lead them to the knowledge of their Maker and the sight of their own duties.[5] Men can find matter enough to occupy their heads and employ their hands with variety, delight, and satisfaction, if they will not boldly quarrel with their own constitution, throwing away the blessings their hands are filled with because those

5 2 Peter 1:3, “all things that pertain unto life and godliness” (King James Version).

hands are not big enough to grasp everything. We shall not have much reason to complain of the narrowness of our minds if we will only employ them on what may be of use to us, for of that they are very capable. Some things are placed out of the reach of our knowledge. It will be an unpardonable, as well as childish, peevishness if for that reason we undervalue the advantages of our knowledge and neglect to improve it for the ends for which it was given us. An idle and unruly servant who would not attend to his work by candlelight has no excuse in pleading that he did not have broad sunshine. The candle that is set up in us shines bright enough for all our purposes. The discoveries we can make with it ought to satisfy us. We shall use our understanding rightly when we treat all objects in the way and proportion in which they are suited to our faculties, and on the grounds on which they are capable of being presented to us. We should not peremptorily or immoderately require demonstration and demand certainty where only probability is to be had, for probability is sufficient to govern all our concerns. If we disbelieve everything because we cannot know all things for certain, we shall be acting about as wisely as someone who would not use his legs, but sat still and perished because he had no wings to fly with.

1.1.6 *Knowledge of our capacity a cure of skepticism and idleness.*— When we know our own strength, we will know better what to undertake with hope of success. Once we have carefully surveyed the powers of our own minds and estimated what we may expect from them, we will not be inclined to sit still and never set our thoughts to work, in despair of knowing anything. Nor, on the other side, will we question everything and disclaim all knowledge because some things cannot be understood. It is very useful for the sailor to know the length of his line, even though he cannot use it to sound all the depths of the ocean. It is enough that he knows it is long enough to reach the bottom at the places where he needs it to direct his voyage and to warn him against running onto shoals that might wreck him. Our business here is not to know all things, but those that concern our conduct. Sup-

pose we can find out the measures by which a rational creature, placed in the condition man is in in this world, may and ought to govern his opinions and the actions that depend on them. Then we need not be troubled that some other things escape our knowledge.

1.1.7 *Occasion of this essay.*—This was what first gave rise to this essay concerning the understanding. Several inquiries are very apt to occupy the human mind, and I thought that the first step toward satisfying them was to take a survey of our own understanding, examine our own powers, and see what things they were suited to. Until that was done, I suspected, we were beginning at the wrong end. We sought in vain the satisfaction of a quiet and secure possession of the truths that most concerned us, while we let our thoughts loose into the vast ocean of being. We acted as if all that boundless extent were the natural and unlimited possession of our understandings, where nothing was exempt from its decisions or escaped its comprehension. So when men extend their inquiries beyond their capacities and let their thoughts wander into depths where they can find no sure footing, it is no wonder that they raise questions and multiply disputes. Since these never come to any clear resolution, they serve only to prolong and increase their doubts, and in the end to confirm them in complete skepticism. Suppose instead that the capacities of our understandings were well considered and the extent of our knowledge once discovered. Suppose the horizon were found that sets the boundary between the lit and the dark parts of things, between what we can and cannot comprehend. Then men might perhaps be less reluctant to accept an acknowledged ignorance of the one, and might employ their thoughts and discussion with more profit and satisfaction on the other.

1.1.8 *What idea stands for.*—This much I thought it necessary to say about the occasion of this inquiry into human understanding. But before I go on to what I have thought on this subject, I must here at the outset beg my reader's pardon for the frequent use of the word "idea," which he will find in the following treat-

ise. I think it is the term that serves best to stand for whatever is the object of the understanding when a man thinks. So I have used it to express whatever is meant by phantasm, notion, species, or whatever else the mind can be occupied with in thinking, and I could not avoid using it frequently.[6]

I presume it will be readily granted me that there are such ideas in men's minds. Everyone is conscious of them in himself, and men's words and actions will satisfy him that they are in others.

Our first inquiry, then, will be how they come into the mind.

NO INNATE SPECULATIVE PRINCIPLES

Locke attacks the claim that principles like "whatever is, is" are stamped on the mind at birth.

1.2.1 *The way shown how we come by any knowledge, sufficient to prove it not innate.*—Some men hold it as an established opinion that there are certain innate principles in the understanding. On this view there are some primary notions, κοιναὶ ἔννοιαι, characters as it were, stamped on the human mind. The soul receives them at the very beginning of its existence and brings them into the world with it.[7] It would be enough to convince unprejudiced readers that this supposition is false if I only showed (as I hope I will in the following parts of this discourse) how men can attain all the knowledge they have simply by using their natural faculties, without the help of any innate impressions. They can also arrive at certainty without any such original notions or principles. For I imagine anyone will readily grant that it would be absurd to suppose the ideas of color innate in a creature to whom God has given sight, and a power to receive them through the eyes from external objects. It would be no less unreasonable to attribute various truths to the impressions of nature and to

6 "Phantasm" and "species" are scholastic terms for the images or forms through which, on the Aristotelian account, the mind perceives and thinks of things.
7 Greek, "common notions": the Stoic term for conceptions supposedly shared by all human beings.

innate characters. For we can observe in ourselves faculties fit to attain as easy and certain a knowledge of those truths as if they had been originally imprinted on the mind.

But a man is not allowed to follow his own thoughts in the search for truth without incurring censure, if they lead him even a little off the common road. So I will set down the reasons that made me doubt the truth of that opinion, as an excuse for my mistake if I am mistaken. I leave them to be considered by those who, like me, are disposed to embrace truth wherever they find it.

1.2.2 *General assent, the great argument.*—Nothing is more commonly taken for granted than that there are certain principles, both speculative and practical (for they speak of both), universally agreed on by all mankind. From this they argue that these principles must be constant impressions that human souls receive at the beginning of their existence. Souls bring them into the world as necessarily and really as they bring any of their inherent faculties.

1.2.3 *Universal consent proves nothing innate.*—This argument from universal consent has an unfortunate flaw. Suppose it were true, as a matter of fact, that there were certain truths on which all mankind agreed. That still would not prove them innate, if some other way can be shown by which men might come to universal agreement in the things they do agree on. And I presume this can be done.

1.2.4 *"What is, is," and "it is impossible for the same thing to be and not to be," not universally assented to.*—But what is worse, this argument from universal consent, which is used to prove innate principles, seems to me a demonstration that there are none. For there are no principles to which all mankind give universal assent. I will begin with the speculative principles, taking as my example those celebrated principles of demonstration, "whatever is, is," and "it is impossible for the same thing to be and not to be." Of all principles, I think these have the most widely granted claim to be innate. Their reputation as universally received maxims is so settled that it will no doubt be

thought strange if anyone seems to question it. Yet I take the liberty of saying that these propositions are so far from having universal assent that a great part of mankind does not even know them.

1.2.5 *Not naturally imprinted on the mind, because not known to children, the intellectually disabled, etc.*—For, first, it is evident that children and the intellectually disabled have not the slightest apprehension or thought of them. That lack is enough to destroy the universal assent that must necessarily accompany all innate truths. It seems to me almost a contradiction to say that truths are imprinted on the soul which it does not perceive or understand. If imprinting means anything, it means nothing but causing certain truths to be perceived. To imprint anything on the mind without the mind's perceiving it seems to me hardly intelligible. Suppose, then, that children and the intellectually disabled have souls, have minds, with those impressions on them. They must then unavoidably perceive them, and necessarily know and assent to these truths. Since they do not, it is evident that there are no such impressions. For if they are not notions naturally imprinted, how can they be innate? And if they are notions imprinted, how can they be unknown? To say that a notion is imprinted on the mind, and at the same time that the mind is ignorant of it and has never yet noticed it, is to reduce this impression to nothing. No proposition can be said to be in the mind if the mind never yet knew it and was never yet conscious of it. If any one can, then by the same reasoning all true propositions the mind is ever capable of assenting to can be said to be in the mind and imprinted on it. For if any proposition the mind never yet knew can be said to be in it, that can only be because the mind is capable of knowing it. And the mind is capable of knowing all the truths it ever will know. Indeed, on this view truths may be imprinted on the mind that it never did and never will know. A man may live a long time and die at last ignorant of many truths that his mind was capable of knowing, and knowing with certainty. So suppose the capacity of knowing is the natural impression being contended for. Then by this

account every truth a man ever comes to know will be innate, and this great point will amount to nothing more than a very improper way of speaking. It claims to assert the contrary, yet says nothing different from those who deny innate principles. Nobody, I think, ever denied that the mind was capable of knowing various truths. The capacity, they say, is innate; the knowledge is acquired. But then what is the point of such a contest over certain innate maxims? If truths can be imprinted on the understanding without being perceived, I cannot see how any of the truths the mind is capable of knowing can differ in origin. They must all be innate, or all come from outside; it is useless for anyone to try to distinguish them. If anyone who talks of innate notions in the understanding means some distinct sort of truths by them, he cannot mean truths in the understanding that it has never perceived and is still wholly ignorant of. For if these words, "to be in the understanding," have any proper meaning, they mean "to be understood." So to be in the understanding and not be understood, to be in the mind and never be perceived, is just the same as saying that something is and is not in the mind or understanding. Suppose, then, that these two propositions, "whatever is, is" and "it is impossible for the same thing to be and not to be," are imprinted by nature. Then children cannot be ignorant of them. Infants, and everyone who has a soul, must necessarily have them in their understandings, know that they are true, and assent to them.

COMING TO THE USE OF REASON

Locke rejects the reply that people know the maxims once they come to the use of reason.

1.2.6 *That men know them when they come to the use of reason, answered.*—To escape this, the usual reply is that all men know and assent to them when they come to the use of reason, and that this is enough to prove them innate. I answer:

1.2.7 Doubtful expressions with hardly any meaning pass for clear reasons with prejudiced people, who do not take the

trouble to examine even what they themselves say. If this answer is to be applied with any tolerable sense to our present purpose, it must mean one of two things. Either as soon as men come to the use of reason, these supposed native inscriptions come to be known and noticed by them. Or the use and exercise of men's reason helps them discover these principles and certainly makes them known to them.

1.2.8 *If reason discovered them, that would not prove them innate.*—Suppose they mean that men can discover these principles by the use of reason, and that this is enough to prove them innate. Then their argument will run as follows, namely, that whatever truths reason can certainly discover to us and make us firmly assent to are all naturally imprinted on the mind. For the universal assent that is made their mark amounts to no more than this: by the use of reason we are capable of coming to a certain knowledge of them and of assenting to them. On these terms there will be no difference between the maxims of the mathematicians and the theorems they deduce from them. All must equally be granted to be innate. They are all discoveries made by the use of reason, and truths that a rational creature can certainly come to know if he applies his thoughts rightly in that direction.

1.2.9 *It is false that reason discovers them.*—But how can these men think the use of reason is needed to discover principles supposed to be innate? For reason, if we may believe them, is nothing but the faculty of deducing unknown truths from principles or propositions already known. Something we need reason to discover can surely never be thought innate, unless, as I have said, we will count as innate all the certain truths that reason ever teaches us. We might as well think the use of reason is needed to make our eyes discover visible objects. It is equally absurd to think reason, or its exercise, is needed to make the understanding see what is originally engraved on it. For nothing can be in the understanding before the understanding perceives it. So to have reason discover truths imprinted in this way is to say that the use of reason discovers to a man what he knew

before. Suppose men have those innate, impressed truths originally, before the use of reason, and yet are always ignorant of them until they come to the use of reason. That is in effect to say that men know them and do not know them at the same time.

1.2.10 It may be said here that mathematical demonstrations and other truths that are not innate are not assented to as soon as they are proposed. That, it will be said, is what distinguishes them from these maxims and other innate truths. I will have occasion shortly to speak more particularly of assent on first proposal. Here I will only grant, and very readily, that these maxims and mathematical demonstrations differ in this. The demonstrations need reason, making use of proofs, to establish them and win our assent. The maxims are embraced and assented to without the least reasoning, as soon as they are understood. But I also ask leave to point out that this exposes the weakness of the evasion that requires the use of reason to discover these general truths. For it must be admitted that no use at all is made of reasoning in discovering them. And I think those who give this answer will not be quick to affirm that the knowledge of this maxim, "that it is impossible for the same thing to be and not to be," is a deduction of our reason. That would make the knowledge of those principles depend on the labor of our thoughts, and so would destroy the bounty of nature they seem so fond of. For all reasoning is searching and casting about, and requires effort and application. Nature supposedly imprinted these principles as the foundation and guide of our reason. How can it be supposed, with any tolerable sense, that we need to use reason to discover them?

1.2.11 Those who will take the trouble to reflect with a little attention on the operations of the understanding will find something about this ready assent of the mind to some truths. It depends neither on native inscription nor on the use of reason, but on a faculty of the mind quite distinct from both, as we will see later. Reason, then, has nothing to do with obtaining our assent to these maxims. So suppose that saying men know and assent to them when they come to the use of reason means that

the use of reason helps us know these maxims. That is utterly false; and if it were true, it would prove them not to be innate.

1.2.12 *Coming to the use of reason not the time we come to know these maxims.*—Suppose that knowing and assenting to them when we come to the use of reason means something else. It may mean that this is the time when the mind comes to notice them, so that children come to know and assent to these maxims as soon as they come to the use of reason. This too is false and frivolous. First, it is false. It is evident that these maxims are not in the mind as early as the use of reason, and therefore coming to the use of reason is falsely named as the time of their discovery. How many instances of the use of reason can we observe in children long before they have any knowledge of this maxim, "that it is impossible for the same thing to be and not to be"? And a great many unlettered people, and people from preliterate societies, pass many years, even of their age of reason, without ever thinking about this and similar general propositions. I grant that men do not come to know these general and more abstract truths, which are thought innate, until they come to the use of reason. I add that they do not know them even then. The reason is that the general abstract ideas these general maxims are about are not framed in the mind until after men come to the use of reason. The maxims are mistaken for innate principles, but they are really discoveries made and truths brought into the mind. They come in the same way, and are discovered by the same steps, as various other propositions that nobody was ever so extravagant as to suppose innate. This I hope to make plain in the rest of this discourse. I therefore grant that men must come to the use of reason before they get the knowledge of those general truths. But I deny that men's coming to the use of reason is the time of their discovery.

1.2.13 *By this they are not distinguished from other knowable truths.*—Meanwhile it is worth noting what this saying amounts to, that men know and assent to these maxims when they come to the use of reason. In actual fact it means no more than this: they are never known or noticed before the use of reason, but may pos-

sibly be assented to at some later point during a man's life. When that will be is uncertain. The same is true of all other knowable truths as well as these. So these maxims gain no advantage over others, and no distinction from them, by this mark of being known when we come to the use of reason. Nor are they thereby proved to be innate; quite the contrary.

1.2.14 *If coming to the use of reason were the time of their discovery, it would not prove them innate.*—But, secondly, suppose it were true that men first know and assent to them precisely when they come to the use of reason. That would not prove them innate either. This way of arguing is as frivolous as the supposition itself is false. A faculty of the mind with quite a separate province begins to exert itself, and at that moment a notion first comes to be noticed and assented to. By what kind of logic does it follow that nature originally imprinted this notion on the mind in its first constitution? Suppose, then, that coming to the use of speech were taken to be the time when these maxims are first assented to. That may be said with as much truth as the time when men come to the use of reason. It would be as good a proof that they were innate as saying they are innate because men assent to them when they come to the use of reason. I agree, then, with these men of innate principles that there is no knowledge of these general and self-evident maxims in the mind until it comes to the exercise of reason. But I deny that coming to the use of reason is the precise time when they are first noticed. And if that were the precise time, I deny that it would prove them innate. Only one thing can truly be meant by this proposition, that men assent to them when they come to the use of reason. The making of general abstract ideas and the understanding of general names accompany the rational faculty and grow up along with it. So children commonly do not get those general ideas, or learn the names that stand for them, until they have exercised their reason for a good while on familiar and more particular ideas. By then their ordinary talk and dealings with others show them to be capable of rational conversation. If assenting to these maxims when men come to the

use of reason can be true in any other sense, I would like it to be shown. Or at least I would like it shown how, in this or any other sense, it proves them innate.

1.2.15 *The steps by which the mind attains several truths.*—The senses at first let in particular ideas and furnish the still empty cabinet. As the mind gradually grows familiar with some of them, they are lodged in the memory and given names. Later the mind goes further, abstracts them, and by degrees learns the use of general names. In this way the mind comes to be furnished with ideas and language, the materials for exercising its discursive faculty. The use of reason becomes more visible every day as the materials that give it employment increase. But although having general ideas and the use of general words and reason usually grow up together, I do not see how this in any way proves them innate. I admit that the mind knows some truths very early, but in a way that shows they are not innate. If we observe, we will find that this knowledge is always about ideas that are not innate but acquired. It first concerns the ideas imprinted by external things, which infants deal with earliest and which make the most frequent impressions on their senses. Among ideas acquired this way, the mind discovers that some agree and others differ. It probably does so as soon as it has any use of memory, as soon as it can retain and perceive distinct ideas. But whether it is then or not, this much is certain: it does so long before it has the use of words, or comes to what we commonly call "the use of reason." Before a child can speak, it knows the difference between the ideas of sweet and bitter (that is, that sweet is not bitter). It knows this as certainly as it knows later, when it can speak, that wormwood and sugarplums are not the same thing.

1.2.16 —A child does not know that three and four are equal to seven until he is able to count to seven and has got the name and idea of equality. Then, once those words are explained, he immediately assents to, or rather perceives the truth of, that proposition. But he does not then readily assent because it is an innate truth. Nor did he fail to assent until then because he

lacked the use of reason. Rather, its truth appears to him as soon as he has settled in his mind the clear and distinct ideas these names stand for. He then knows the truth of that proposition on the same grounds and by the same means by which he knew earlier that a rod and a cherry are not the same thing. On the same grounds, too, he may come to know later "that it is impossible for the same thing to be and not to be," as will be shown more fully later. Take the general ideas those maxims are about, the meaning of the general terms that stand for them, and the joining in his mind of the ideas they stand for. The later anyone comes to any of these, the later he will assent to those maxims. Their terms, and the ideas the terms stand for, are no more innate than those of a cat or a weasel. So he must wait until time and observation have acquainted him with them. Then some occasion will first make him put those ideas together in his mind and observe whether they agree or disagree, as those propositions express. On that occasion he will be in a position to know the truth of these maxims. And that is why a man knows that eighteen and nineteen are equal to thirty-seven by the same self-evidence by which he knows that one and two are equal to three. Yet a child does not know the first as soon as the second. This is not for lack of the use of reason. It is because the ideas the words "eighteen," "nineteen," and "thirty-seven" stand for are acquired later than those signified by "one," "two," and "three."

ASSENT ON FIRST HEARING

Ready assent once the terms are understood marks self-evidence, not innateness.

1.2.17 *Assenting as soon as proposed and understood proves them not innate.*—This evasion of general assent when men come to the use of reason fails, then. It leaves no difference between the supposedly innate truths and other truths acquired and learned later. So men have tried another way to secure universal assent for what they call maxims. They say the maxims are generally

assented to as soon as they are proposed and the terms they are proposed in are understood. All men, even children, assent to these propositions as soon as they hear and understand the terms, and they think this is enough to prove them innate. Men never fail to acknowledge these propositions as undoubted truths once they have understood the words. From this they would infer that the propositions were certainly lodged in the understanding from the first. Without any teaching, the mind immediately takes hold of them and assents to them at their very first proposal, and it never doubts them again afterward.

1.2.18 *If such an assent is a mark of the innate, then "that one and two are equal to three," "that sweetness is not bitterness," and a thousand like them must be innate.*—In answer to this, I ask "whether ready assent given to a proposition on first hearing it and understanding its terms is a certain mark of an innate principle." If it is not, such general assent is urged in vain as a proof of them. If they say it is a mark of the innate, they must then grant that all propositions generally assented to as soon as they are heard are innate. They will then find themselves plentifully stocked with innate principles. For consider the ground on which men would have those maxims pass for innate, namely, assent on first hearing and understanding the terms. On that same ground they must also admit various propositions about numbers to be innate. Everybody assents on first hearing and understanding the terms that one and two are equal to three, that two and two are equal to four, and to a multitude of other similar propositions about numbers. All of these must have a place among these innate axioms. Nor is this the privilege of numbers alone, and of propositions made about various numbers. Even natural philosophy and all the other sciences supply propositions that are sure to meet with assent as soon as they are understood. Nobody balks at the truth that two bodies cannot be in the same place any more than at these maxims: "that it is impossible for the same thing to be and not to be," "that white is not black," "that a square is not a circle," "that yellowness is not sweetness." There are a million other such propositions, at least as many as

we have distinct ideas of. Every man in his right mind must necessarily assent to them on first hearing them, if he knows what the names stand for. These men may be true to their own rule and make assent on first hearing and understanding the terms a mark of the innate. If so, they must grant as many innate propositions as men have distinct ideas. Indeed, they must grant as many as there are propositions men can make in which different ideas are denied of one another. Every proposition in which one different idea is denied of another will find assent on first hearing and understanding the terms. It will do so as certainly as this general one, "it is impossible for the same thing to be and not to be." It will do so as certainly, too, as the proposition that is the foundation of this one and is the easier of the two to understand, "the same is not different." On this account they will have legions of innate propositions of this one sort alone, without mentioning any other. But no proposition can be innate unless the ideas it is about are innate. So this will amount to supposing that all our ideas of colors, sounds, tastes, shape, etc., are innate. Nothing can be more opposed to reason and experience than that. Universal and ready assent on hearing and understanding the terms is, I grant, a mark of self-evidence. But self-evidence depends not on innate impressions but on something else, as we will show later. It belongs to various propositions that nobody has yet been so extravagant as to claim are innate.

1.2.19 *Such less general propositions known before these universal maxims.*—Some more particular self-evident propositions are assented to on first hearing, such as that one and two are equal to three, that green is not red, etc. Let no one say that these are accepted as consequences of the more universal propositions regarded as innate principles. Anyone who will just take the trouble to observe what happens in the understanding will certainly find that these and similar less general propositions are certainly known and firmly assented to by people utterly ignorant of those more general maxims. These propositions, then, are in the mind earlier than those so-called first principles. So they

cannot owe to them the assent with which they are received on first hearing.

1.2.20 *"One and one equal to two," etc., not general or useful, answered.*—It may be said that "these propositions, namely, two and two are equal to four, red is not blue, etc., are not general maxims, nor of any great use." I answer that this makes no difference to the argument from universal assent on hearing and understanding. If that is the certain mark of the innate, then any proposition that receives general assent as soon as it is heard and understood must be admitted as innate. It must be admitted just as much as this maxim, "that it is impossible for the same thing to be and not to be," since on this ground they are equal. As for the difference of being more general, that makes this maxim further from being innate. Those general and abstract ideas are more foreign to our first apprehensions than the ideas in more particular self-evident propositions. So it takes longer for the growing understanding to admit and assent to them. As for the usefulness of these celebrated maxims, that will perhaps not prove as great as is generally thought, when it is considered more fully in its proper place.

1.2.21 *These maxims not being known sometimes until proposed proves them not innate.*—But we have not yet finished with assenting to propositions on first hearing and understanding their terms. We should first note that this, instead of being a mark that they are innate, is a proof of the contrary. It supposes that various people who understand and know other things are ignorant of these principles until they are proposed to them. It also supposes that someone may be unacquainted with these truths until he hears them from others. If they were innate, why would they need to be proposed in order to gain assent? They would be in the understanding by a natural and original impression (if there were any such thing), and so they could not fail to be known already. Or does proposing them print them more clearly on the mind than nature did? If so, it follows that a man knows them better after he has been taught them in this way than he did before. From this it will follow that other people's

teaching can make these principles more evident to us than nature has made them by impression. That fits poorly with the opinion of innate principles and gives them little authority. On the contrary, it makes them unfit to be the foundations of all our other knowledge, as they are claimed to be. This cannot be denied: men first become acquainted with many of these self-evident truths when they are proposed. But it is clear what happens to anyone who does so. He finds in himself that he is beginning to know a proposition he did not know before, and from then on he never questions it. This is not because it was innate. It is because considering the nature of the things contained in those words would not allow him to think otherwise, however and whenever he is brought to reflect on them. Suppose whatever is assented to on first hearing and understanding the terms must pass for an innate principle. Then every well-grounded observation, drawn from particulars into a general rule, must be innate. Yet it is certain that only sharp minds, not everyone, first hit on these observations and reduce them to general propositions. These propositions are not innate but gathered from previous acquaintance with, and reflection on, particular instances. Once observant men have made these propositions, unobservant men cannot refuse their assent when they are proposed to them.

1.2.22 *"Implicitly known before proposing" means that the mind is capable of understanding them, or else means nothing.*—It may be said that "the understanding has an implicit knowledge of these principles, but not an explicit one, before this first hearing." Those who claim "that they are in the understanding before they are known" must say so. But it will be hard to conceive what is meant by a principle imprinted on the understanding implicitly, unless it is this: that the mind is capable of understanding such propositions and firmly assenting to them. In that case all mathematical demonstrations, as well as first principles, must be accepted as native impressions on the mind. I fear this will hardly be granted by those who find it harder to demonstrate a proposition than to assent to it once it is demonstrated. And few

mathematicians will be quick to believe that all the diagrams they have drawn were only copies of innate characters that nature had engraved on their minds.

1.2.23 *The argument from assent on first hearing rests on the false assumption that there has been no previous teaching.*—There is, I fear, a further weakness in the argument just mentioned. It would persuade us that the maxims men admit on first hearing should be thought innate, because men assent to propositions they are not taught, and do not accept from the force of any argument or demonstration but merely from an explanation or understanding of the terms. Beneath this there seems to me to lie a fallacy. It supposes that men are not taught and do not learn anything new, when in truth they are taught, and do learn something they did not know before. For, first, it is evident that they have learned the terms and what the terms signify, and neither of these was born with them. But that is not all the acquired knowledge in the case. The ideas themselves that the proposition is about were not born with them, any more than their names were; they were acquired afterward. So in all propositions assented to on first hearing, the terms of the proposition, their standing for certain ideas, and the ideas themselves that they stand for are none of them innate. I would very much like to know, then, what is left in such propositions that is innate. I would be glad to have anyone name a proposition whose terms or ideas were either of them innate. We acquire ideas and names by degrees, and learn their proper connection with one another. Then we assent on first hearing to propositions made in terms whose meaning we have learned, and which express an agreement or disagreement we can perceive in our ideas when they are put together. Yet at the same time we are quite incapable of assenting to other propositions that are in themselves just as certain and evident, but that concern ideas not so soon or so easily acquired. For a child quickly assents to the proposition that "an apple is not fire," once familiar acquaintance has distinctly imprinted the ideas of those two different things on his mind, and he has learned that the names apple and fire stand for

them. Yet it will perhaps be some years before the same child assents to the proposition "that it is impossible for the same thing to be and not to be." The words may be just as easy to learn, but their meaning is broader, more comprehensive, and more abstract than that of the names attached to the sensible things the child deals with. So it takes him longer to learn their precise meaning, and it plainly takes more time to form in his mind the general ideas they stand for. Until that is done, you will try in vain to make any child assent to a proposition made up of such general terms. But as soon as he has acquired those ideas and learned their names, he readily accepts the one proposition as well as the other, and both for the same reason, namely, because he finds that the ideas he has in his mind agree or disagree, according as the words standing for them are affirmed or denied of one another in the proposition. But if propositions are put to him in words that stand for ideas he does not yet have in his mind, he gives them neither assent nor dissent, however evidently true or false they are in themselves; he is simply ignorant. For words are nothing but empty sounds except insofar as they are signs of our ideas. We cannot help assenting to them insofar as they correspond to the ideas we have, but no further. But since showing the steps and ways by which knowledge comes into our minds, and the grounds of the various degrees of assent, is the business of the discourse that follows, it may be enough to have merely touched on it here, as one reason that made me doubt those innate principles.

1.2.24 *Not innate, because not universally assented to.*—To conclude this argument from universal consent: I agree with these defenders of innate principles that if they are innate, they must have universal assent. For a truth to be innate and yet not assented to is as unintelligible to me as for a man to know a truth and be ignorant of it at the same time. But then, by these men's own admission, they cannot be innate. They are not assented to by those who do not understand the terms, nor by a large part of those who do understand them but have never yet heard of or thought about those propositions—which I think is at least half

of mankind. But even if the number were far smaller, and children alone were ignorant of them, it would be enough to destroy universal assent, and so to show that these propositions are not innate.

1.2.25 *These maxims are not the first things known.*—But so that I may not be accused of arguing from the thoughts of infants, which are unknown to us, and of drawing conclusions from what goes on in their understandings before they express it, I say next that these two general propositions are not the truths that first take possession of children's minds. Nor do they come before all acquired and adventitious notions, as they would have to if they were innate. Whether we can pin it down or not does not matter: there is certainly a time when children begin to think, and their words and actions assure us that they do. When, therefore, they are capable of thought, of knowledge, of assent, can it rationally be supposed that they are ignorant of the notions nature has imprinted, if there were any? Can it be imagined with any show of reason that they perceive the impressions from things outside them, and are at the same time ignorant of the characters that nature itself has taken care to stamp within? Can they receive and assent to adventitious notions, and yet be ignorant of those that are supposed to be woven into the very principles of their being, and imprinted there in indelible characters to be the foundation and guide of all their acquired knowledge and future reasoning? This would make nature take pains to no purpose, or at least write very badly, since its characters could not be read by eyes that saw other things very well. And it is a very poor supposition that truths which are not the first known, and without which the undoubted knowledge of many other things can be had, are the clearest parts of truth and the foundations of all our knowledge. The child certainly knows that the nurse who feeds it is neither the cat it plays with nor the Black man it is afraid of, and that the wormseed or mustard it refuses is not the apple or sugar it cries for. Of this it is certainly and undoubtedly assured. But will anyone say that it is by virtue of the principle "that it is impossible for the same thing to be

and not to be" that it so firmly assents to these and other parts of its knowledge? Or that the child has any notion or grasp of that proposition, at an age at which it plainly knows a great many other truths? Anyone who will say that children join these general abstract speculations to their feeding bottles and their rattles may perhaps justly be thought to have more passion and zeal for his opinion, but less sincerity and truth, than a child of that age.

1.2.26 *And so not innate.*—There are, then, several general propositions that meet with constant and ready assent as soon as they are put to grown men, who have come to use more general and abstract ideas and names standing for them. Yet since these propositions are not found in those of tender years, who nevertheless know other things, they cannot claim the universal assent of intelligent persons, and so can by no means be supposed innate. For it is impossible that any innate truth (if there were any) should be unknown, at least to anyone who knows anything else. If there are innate truths, they must be innate thoughts, since nothing is a truth in the mind that it has never thought about. From this it is evident that if there are any innate truths in the mind, they must necessarily be the first things thought of—the first that appear there.

1.2.27 *Not innate, because they appear least where what is innate shows itself most clearly.*—We have already sufficiently proved that the general maxims we are discussing are not known to children, to people with intellectual disabilities, and to a great part of mankind. From this it is evident that they do not have universal assent, and are not general impressions. But there is this further argument against their being innate: if these characters were native and original impressions, they should appear fairest and clearest in the very persons in whom we find no trace of them. And in my opinion it is a strong presumption that they are not innate that they are least known to those in whom, if they were innate, they would have to exert themselves with the most force and vigor. For children, people with intellectual disabilities, people from preliterate societies, and the illiterate are of all

people the least corrupted by custom or borrowed opinions. Learning and education have not cast their native thoughts into new molds, nor, by laying foreign and studied doctrines over them, confused the fair characters nature had written there. One might reasonably imagine, then, that in their minds these innate notions would lie open to everyone's view, as the thoughts of children certainly do. It might very well be expected that these principles would be perfectly known to people with intellectual disabilities. For being stamped directly on the soul (as these men suppose), they can have no dependence on the constitution or organs of the body, which is the only acknowledged difference between such people and others. One would think, on these men's principles, that all these native beams of light (if there were any) would shine out in their full luster in those who have no reserve and no arts of concealment, and leave us no more in doubt of their being there than we are of their love of pleasure and their abhorrence of pain. But alas! Among children, people with intellectual disabilities, people from preliterate societies, and the grossly illiterate, what general maxims are to be found? What universal principles of knowledge? Their notions are few and narrow, borrowed only from the objects they have had most to do with, and which have made the most frequent and strongest impressions on their senses. A child knows his nurse and his cradle, and by degrees the playthings of a somewhat older age. A young man from a preliterate society has his head filled, perhaps, with love and hunting, according to the fashion of his tribe. But anyone who expects these abstract maxims and reputed principles of the sciences from an untaught child or a wild inhabitant of the woods will, I fear, find himself mistaken. General propositions of this kind are seldom mentioned in the huts of Native Americans, much less are they to be found in the thoughts of children, or any impressions of them in the minds of people with intellectual disabilities. They are the language and business of the schools and academies of learned nations, accustomed to the kind of conversation or learning in which disputes are frequent. These

maxims are suited to artificial argumentation and useful for convincing opponents, but they do not contribute much to the discovery of truth or the advancement of knowledge. Of their small use for the improvement of knowledge I shall have occasion to speak more fully in Book 4, chapter 7.

1.2.28 *Recapitulation.*—I do not know how absurd this may seem to the masters of demonstration, and probably it will hardly go down with anybody on first hearing. I must therefore beg a little truce with prejudice, and ask that censure be held back until I have been heard out in the rest of this discourse; I am very willing to submit to better judgments. And since I am searching impartially for truth, I shall not be sorry to be convinced that I have been too fond of my own notions—which, I confess, we are all apt to be when application and study have warmed our heads with them.

On the whole, I cannot see any ground for thinking these two speculative maxims innate. They are not universally assented to. The assent they so generally meet with is no different from what several propositions not admitted to be innate share equally with them. And the assent given them is produced in another way, and does not come from natural inscription, as I have no doubt I shall make clear in the discourse that follows. And if these first principles of knowledge and science are found not to be innate, no other speculative maxims can (I suppose) claim with better right to be so.

NO INNATE PRACTICAL PRINCIPLES

Locke argues that no moral rule commands universal assent, so none can be innate.

1.3.1 *No moral principles are as clear and as generally received as the speculative maxims just mentioned.*—If the speculative maxims we discussed in the previous chapter do not have an actual universal assent from all mankind, as we proved there, it is much more plainly visible that practical principles fall short of universal acceptance. I think it will be hard to give an example of any one

moral rule that can claim so general and ready an assent as "what is, is," or that is so manifest a truth as "that it is impossible for the same thing to be and not to be." From this it is evident that they are further removed from any title to be innate, and the doubt that they are native impressions on the mind is stronger against moral principles than against the others. Not that this calls their truth into question at all. They are equally true, though not equally evident. Those speculative maxims carry their own evidence with them, but moral principles require reasoning and discussion, and some exercise of the mind, to discover the certainty of their truth. They do not lie open as natural characters engraved on the mind. If there were any such characters, they would have to be visible by themselves, and certain and known to everybody by their own light. But this is no disparagement of their truth and certainty, any more than it is of the truth or certainty that the three angles of a triangle are equal to two right angles, just because that is not as evident as "the whole is bigger than a part," nor as apt to be assented to on first hearing. It is enough that these moral rules are capable of demonstration, so that it is our own fault if we do not arrive at certain knowledge of them. But the ignorance many men are in about them, and the slowness with which others assent to them, are clear proofs that they are not innate, and are not the kind of thing that presents itself to men's view without searching.

1.3.2 *Good faith and justice are not acknowledged as principles by all men.*—Whether there are any such moral principles on which all men agree, I appeal to anyone who has been even moderately acquainted with the history of mankind, and has looked abroad beyond the smoke of his own chimney. Where is that practical truth that is universally received without doubt or question, as it would have to be if it were innate? Justice, and the keeping of contracts, is what most men seem to agree on. This is a principle thought to extend even to the dens of thieves and the confederacies of the worst villains; those who have gone furthest toward putting off humanity itself keep faith and rules of justice

with one another. I grant that outlaws themselves do this among one another; but they do it without accepting these as innate laws of nature. They practice them as rules of convenience within their own communities. But it is impossible to conceive that someone embraces justice as a practical principle who deals fairly with his fellow highwayman and at the same time robs or kills the next honest man he meets. Justice and truth are the common ties of society. So even outlaws and robbers, who break with all the rest of the world, must keep faith and rules of fairness among themselves, or they cannot hold together. But will anyone say that those who live by fraud and plunder have innate principles of truth and justice that they accept and assent to?

1.3.3 *The objection that, though men deny them in practice, they admit them in their thoughts, answered.*—Perhaps it will be urged that the tacit assent of their minds agrees with what their practice contradicts. I answer, first, that I have always thought men's actions the best interpreters of their thoughts. But since it is certain that most men's practice, and some men's open declarations, have either questioned or denied these principles, it is impossible to establish a universal consent (even if we looked for it only among grown men), and without that it is impossible to conclude that they are innate. Second, it is very strange and unreasonable to suppose innate practical principles that end only in contemplation. Practical principles derived from nature are there to operate, and must produce actions that conform to them, not merely a speculative assent to their truth; otherwise there is no point in distinguishing them from speculative maxims. Nature, I admit, has put into man a desire of happiness and an aversion to misery. These indeed are innate practical principles, which (as practical principles should) continue constantly to operate and influence all our actions without ceasing. They may be observed, steady and universal, in all persons and all ages. But these are inclinations of the appetite toward good, not impressions of truth on the understanding. I do not deny that there are natural tendencies imprinted on men's minds, and

that from the very first instances of sense and perception some things are pleasing to them and others unwelcome, some things they are drawn to and others they flee. But this does nothing to support innate characters on the mind that are supposed to be the principles of knowledge regulating our practice. Far from confirming such natural impressions on the understanding, this is an argument against them. For if there were certain characters imprinted by nature on the understanding as the principles of knowledge, we could not help perceiving them constantly operating in us and influencing our knowledge, just as we perceive those others on the will and appetite. These never cease to be the constant springs and motives of all our actions, and we perpetually feel them strongly impelling us.

1.3.4 *Moral rules need a proof; therefore they are not innate.*— Another reason that makes me doubt any innate practical principles is that I think no moral rule can be proposed for which a man may not justly demand a reason. That would be perfectly ridiculous and absurd if they were innate, or even self-evident—which every innate principle must be, needing no proof to establish its truth and no reason to win it approval. Anyone would be thought to lack common sense who asked, on the one side, or on the other side set out to give, a reason why "it is impossible for the same thing to be and not to be." It carries its own light and evidence with it and needs no other proof. Whoever understands the terms assents to it for its own sake, or else nothing will ever be able to bring him to do so. But suppose that most unshakable rule of morality and foundation of all social virtue, "that one should do as he would be done by," were proposed to someone who had never heard it before but was capable of understanding its meaning. Might he not, without any absurdity, ask for a reason why? And would not the person proposing it be obliged to make its truth and reasonableness clear to him? This plainly shows that it is not innate. If it were, it could neither need nor receive any proof, but would have to be received and assented to (at least as soon as it was heard and understood) as an unquestionable truth that a man could in no

way doubt. So the truth of all these moral rules plainly depends on something else prior to them, from which they must be deduced—which could not be the case if they were innate, or even self-evident.

1.3.5 *An example: keeping agreements.*—That men should keep their agreements is certainly a great and undeniable rule of morality. But if a Christian, who looks ahead to happiness and misery in another life, is asked why a man must keep his word, he will give this reason: because God, who has the power of eternal life and death, requires it of us. If a Hobbist is asked why, he will answer: because the public requires it, and Leviathan will punish you if you do not.[8] And if one of the ancient philosophers had been asked, he would have answered: because it was dishonest, beneath the dignity of a man, and contrary to virtue, the highest perfection of human nature, to do otherwise.

1.3.6 *Virtue is generally approved, not because it is innate, but because it is profitable.*—From this naturally comes the great variety of opinions about moral rules found among men, according to the different kinds of happiness they look forward to or set before themselves. That could not be if practical principles were innate and imprinted on our minds directly by the hand of God. I grant that the existence of God is manifest in so many ways, and the obedience we owe him is so agreeable to the light of reason, that a great part of mankind bear witness to the law of nature. Yet I think it must be allowed that several moral rules may meet with very general approval from mankind without men either knowing or admitting the true ground of morality. That ground can only be the will and law of a God who sees men in the dark, has rewards and punishments in his hand, and has power enough to call the proudest offender to account: for since God has joined virtue and public happiness together by an inseparable connection, and made the practice of virtue necessary to the preservation of society and visibly beneficial to everyone the virtuous man deals with, it is no wonder that

8 A "Hobbist" is a follower of Thomas Hobbes (1588–1679), whose *Leviathan* (1651) gave that name to the sovereign power of the commonwealth.

everyone should not only accept these rules but recommend and extol them to others, since he is sure to reap advantage for himself from their observing them. He may, out of interest as well as conviction, cry up as sacred what, if it were once trampled on and profaned, would leave him neither safe nor secure. This takes nothing away from the moral and eternal obligation these rules evidently have. Yet it shows that the outward acknowledgment men pay them in words does not prove that they are innate principles. Indeed, it does not even prove that men inwardly assent to them in their own minds as the inviolable rules of their own practice. For we find that self-interest and the conveniences of this life lead many men to make an outward profession of approval of them, whose actions sufficiently prove that they give very little thought to the law-giver who prescribed these rules, or to the hell he has ordained for the punishment of those who break them.

1.3.7 *Men's actions convince us that the rule of virtue is not their internal principle.*—For if we do not, out of politeness, credit most men's professions with too much sincerity, but take their actions to be the interpreters of their thoughts, we shall find that they have no such inner veneration for these rules, nor so full a conviction of their certainty and obligation. The great principle of morality, "to do as one would be done by," is more praised than practiced. But though breaking this rule can be no greater vice than teaching others that it is no moral rule and not binding, such teaching would be thought madness, and contrary to the very interest men sacrifice to when they break it themselves. Perhaps conscience will be urged as something that checks us for such breaches, so that the internal obligation and establishment of the rule is preserved.

1.3.8 *Conscience is no proof of any innate moral rule.*—To this I answer that I have no doubt that many men, without its being written on their hearts, may come to assent to several moral rules and be convinced of their obligation, in the same way that they come to know other things. Others may come to the same mind from their education, their company, and the customs of

their country. This conviction, however acquired, will serve to set conscience to work—and conscience is nothing but our own opinion or judgment of the moral rightness or depravity of our own actions. And if conscience is a proof of innate principles, then contraries may be innate principles, since some men, with the same bent of conscience, pursue what others avoid.

ENORMITIES WITHOUT REMORSE

Travelers' reports of cruel practices show that whole nations break supposed innate moral rules.

1.3.9 *Examples of enormities committed without remorse.*—But I cannot see how any men could ever break those moral rules with confidence and serenity if they were innate and stamped on their minds. Just look at an army sacking a town, and see what observance or sense of moral principles, what touch of conscience, there is for all the outrages they commit. Robberies, murders, rapes are the sport of men set free from punishment and censure. Have there not been whole nations, and those among the most civilized peoples, among whom exposing their children and leaving them in the fields to perish from want or wild beasts has been the practice, as little condemned or hesitated over as begetting them? Do they not still, in some countries, put children into the same graves with their mothers if the mothers die in childbirth, or dispatch them if a pretended astrologer declares that they were born under unlucky stars? And are there not places where, at a certain age, they kill or expose their parents without any remorse at all? In a part of Asia, when the case of the sick comes to be thought hopeless, they are carried out and laid on the ground before they are dead, and left there, exposed to wind and weather, to perish without help or pity[9]. Among the Mingrelians, a people who profess Christianity, it is

9 LOCKE'S NOTE. Gruber, in Thévenot, part 4, p. 13.

TRANSLATOR'S NOTE. Melchisédech Thévenot published a large French collection of travel accounts (1663–72); Johann Grueber was a Jesuit traveler in Asia.

common to bury their children alive without scruple[10]. There are places where they castrate their children[11].[12] The Caribs used to castrate their children in order to fatten and eat them[13]. And Garcilaso de la Vega tells us of a people in Peru who used to fatten and eat the children they had by their female captives, whom they kept as concubines for that purpose; and when the women were past childbearing, the mothers themselves were killed too and eaten[14]. The virtues by which the Tupinambá believed they earned paradise were revenge and eating great numbers of their enemies. They do not even have a word for God[15], and have no religion and no worship. The saints canonized among the Turks lead lives that cannot be decently described.[16] A remarkable passage to this purpose from the travels of Baumgarten, a book not met with every day, I shall set down in full in the language in which it was published. "There (namely near Belbes in Egypt) we saw a Muslim saint sitting naked among the heaps of sand, just as he came from his mother's womb. It is the custom among the Muslims, as we learned, to worship and venerate as saints those who are out of their minds and without reason. Moreover, those who, after long leading a most depraved life, at last take up voluntary penance and poverty, they likewise regard as worthy of veneration for their holiness. Men of this kind have a sort of unbridled liberty to enter any houses they like, to eat, to drink, and, what is more,

10 LOCKE'S NOTE. Lambert, in Thévenot, p. 38.

TRANSLATOR'S NOTE. Archangelo Lamberti, an Italian missionary who wrote on Mingrelia.

11 LOCKE'S NOTE. Vossius, On the Origin of the Nile, chapters 18, 19.

TRANSLATOR'S NOTE. Isaac Vossius (1618–1689), Dutch scholar.

12 The Mingrelians are a people of western Georgia, in the Caucasus.

13 LOCKE'S NOTE. Peter Martyr, Decades, 1.

TRANSLATOR'S NOTE. Peter Martyr d'Anghiera (1457–1526), author of the *Decades of the New World*.

14 LOCKE'S NOTE. History of the Incas, book 1, chapter 12.

15 LOCKE'S NOTE. Léry, chapter 16, pp. 216, 231.

16 Inca Garcilaso de la Vega (1539–1616) was a historian of Peru, son of a Spanish conquistador and an Inca noblewoman. The Tupinambá were a people of the Brazilian coast, described by the French Protestant Jean de Léry (1536–1613) in his *History of a Voyage to the Land of Brazil* (1578).

to sleep with the women; and if a child follows from this intercourse, it too is considered holy.[17] So they show these men great honors while they live, and when they are dead they build very large temples or monuments to them, and count it the greatest good fortune to touch and bury them. We heard these things said, and still to be said, from our Mucrelus through an interpreter. Moreover, that saint whom we saw in that place was publicly and highly commended as a holy man, godly and outstanding in integrity, because he had never had intercourse with women or boys, but only with she-asses and mules." Baumgarten, *Peregrinatio*, book 2, chapter 1, page 73. More of the same kind concerning these precious saints among the Turks may be seen in Pietro della Valle, in his letter of January 25, 1616. Where, then, are those innate principles of justice, piety, gratitude, equity, chastity?[18] Or where is that universal consent that assures us there are such inborn rules? Murders in duels, when fashion has made them honorable, are committed without any remorse of conscience; indeed, in many places innocence in this matter is the greatest disgrace. And if we look abroad and view men as they are, we shall find that in one place they feel remorse for doing or omitting what others, in another place, think earns them merit.

1.3.10 *Men have contrary practical principles.*—Anyone who will carefully read the history of mankind, look abroad among the various tribes of men, and survey their actions impartially, will be able to satisfy himself of this. There is hardly a principle of morality that can be named, or a rule of virtue that can be thought of (except only those absolutely necessary to hold society together, and even these are commonly neglected between separate societies), that is not somewhere or other slighted and condemned by the general custom of whole societies of men,

17 Locke quotes this passage in Latin; it is translated here. Martin von Baumgarten, a German nobleman, made a pilgrimage to Egypt and the Holy Land in 1507–08; his account, *Peregrinatio*, was published in 1594.

18 Pietro della Valle (1586–1652) was an Italian traveler in the Near East and India whose travels were published as letters.

governed by practical opinions and rules of living quite opposite to those of others.

1.3.11 *Whole nations reject several moral rules.*—Here, perhaps, it will be objected that a rule's being broken is no argument that it is not known. I grant the objection holds where men, though they transgress, do not disown the law—where fear of shame, censure, or punishment shows the mark of some awe the law has over them. But it is impossible to conceive that a whole nation of men should all publicly reject and renounce what every one of them certainly and infallibly knew to be a law; for that is what they must know who have it naturally imprinted on their minds. It is possible that men may sometimes acknowledge rules of morality which in their private thoughts they do not believe to be true, only to keep up their reputation and esteem among those who are persuaded of their obligation. But it is not to be imagined that a whole society of men should publicly and openly disown and cast off a rule which they could not help being infallibly certain, in their own minds, was a law, and which they could not be unaware that all the men they dealt with knew to be such. Every one of them would then have to expect from the others all the contempt and abhorrence due to someone who declares himself devoid of humanity—someone who, by confounding the known and natural measures of right and wrong, cannot but be looked on as the declared enemy of their peace and happiness. Whatever practical principle is innate cannot fail to be known by everyone to be just and good. It is therefore little short of a contradiction to suppose that whole nations of men should, both in what they profess and in what they practice, unanimously and universally give the lie to what every one of them knew, by the most invincible evidence, to be true, right, and good. This is enough to satisfy us that no practical rule that is anywhere universally broken, with public approval or permission, can be supposed innate. But I have something further to add in answer to this objection.

1.3.12 The breaking of a rule, you say, is no argument that it is unknown. I grant it. But the generally permitted breaking of it

anywhere is, I say, a proof that it is not innate. For example, let us take one of those rules which, being the most obvious deductions of human reason and in keeping with the natural inclination of most men, the fewest people have had the impudence to deny or the thoughtlessness to doubt. If any rule can be thought naturally imprinted, none, I think, has a better claim to be innate than this: "Parents, preserve and cherish your children." When you say, then, that this is an innate rule, what do you mean? Either that it is an innate principle which on all occasions stirs up and directs the actions of all men; or else that it is a truth which all men have imprinted on their minds, and which they therefore know and assent to. But it is innate in neither of these senses. First, that it is not a principle that influences all men's actions I have proved by the examples cited above. Nor need we go as far as Mingrelia or Peru to find examples of people who neglect, abuse, and even destroy their children, or regard this merely as the worse-than-brutish behavior of some remote nations, when we remember that among the Greeks and Romans it was a common and uncondemned practice to expose their innocent infants without pity or remorse. Second, that it is an innate truth known to all men is also false. For "Parents, preserve your children" is so far from being an innate truth that it is no truth at all, since it is a command and not a proposition, and so is not capable of truth or falsehood. To make it capable of being assented to as true, it must be reduced to some proposition like this: "It is the duty of parents to preserve their children." But what duty is cannot be understood without a law; nor can a law be known or supposed without a lawmaker, or without reward and punishment. So it is impossible that this, or any other practical principle, should be innate, that is, be imprinted on the mind as a duty, without supposing that the ideas of God, of law, of obligation, of punishment, and of a life after this one are innate. For it is evident in itself that punishment does not follow the breach of this rule in this life, and consequently that the rule does not have the force of a law in countries where the generally accepted practice runs counter to it. But these ideas

(which must all be innate if anything is innate as a duty) are so far from being innate that it is not every studious or thinking man, much less everyone who is born, in whom they are found clear and distinct. And that the one among them which seems most likely of all to be innate—I mean the idea of God—is not so will, I think, appear very evident to any thoughtful man in the next chapter.

1.3.13 From what has been said, I think we may safely conclude that any practical rule that is, in any place, generally and with permission broken cannot be supposed innate. For it is impossible that people should confidently and serenely break, without shame or fear, a rule that they could not help clearly knowing God had set up, and that he would certainly punish the breaking of (which they must know, if it were innate) so severely as to make it a very bad bargain for the transgressor. Without knowledge of this kind, a man can never be certain that anything is his duty. Ignorance of the law or doubt about it, hopes of escaping the lawmaker's knowledge or power, and the like, may make people give way to a present appetite. But let anyone see the fault and the rod beside it, and with the transgression a fire ready to punish it; a tempting pleasure, and the hand of the Almighty visibly raised and ready to take vengeance (for this must be the case wherever a duty is imprinted on the mind). Then tell me whether it is possible for people with such a prospect, such certain knowledge as this, to offend recklessly and without scruple against a law that they carry about with them in indelible characters, and that stares them in the face while they are breaking it. Tell me whether people, at the very time they feel in themselves the imprinted edicts of an omnipotent lawmaker, can confidently and cheerfully slight his most sacred commands and trample them underfoot. And lastly, tell me whether it is possible that, while a man openly defies this innate law and supreme lawgiver in this way, all the bystanders, and even the governors and rulers of the people, who are full of the same sense of both the law and the lawmaker, should silently look the other way, without expressing their disapproval or lay-

ing the least blame on it. There are indeed principles of action lodged in men's appetites. But these are so far from being innate moral principles that, if they were given free rein, they would lead men to overturn all morality. Moral laws are set as a curb and restraint on these excessive desires. They can serve as such only through rewards and punishments that outweigh whatever satisfaction anyone expects to get from breaking the law. If, therefore, anything is imprinted on the minds of all men as a law, all men must have a certain and unavoidable knowledge that certain and unavoidable punishment will follow the breaking of it. For if people can be ignorant or doubtful of what is innate, it is pointless to insist on and urge innate principles. Truth and certainty (the things they claim to provide) are not secured by them at all, and people are in the same uncertain, drifting state with them as without them. An innate law must be accompanied by a clear, indubitable knowledge of unavoidable punishment, great enough to make the transgression very undesirable, unless, along with an innate law, they can suppose an innate gospel too. I would not be misunderstood here. I do not think, because I deny an innate law, that there are no laws but positive ones. There is a great deal of difference between an innate law and a law of nature. The first is something imprinted on our minds at their very beginning. The second is something we are ignorant of but may come to know by the use and proper application of our natural faculties. And I think those who run to opposite extremes depart from the truth equally: those who affirm an innate law, and those who deny that there is a law knowable by the light of nature, that is, without the help of positive revelation.

1.3.14 *Those who maintain innate practical principles do not tell us what they are.*—The difference among people in their practical principles is so evident that I think I need say no more to show that it will be impossible to find any innate moral rules by this mark of general assent. And it is enough to make one suspect that the supposition of such innate principles is only an opinion adopted at will, since those who talk so confidently about them

are so reluctant to tell us which they are. This might justly be expected from those who lay such stress on this opinion. Some declare that God has imprinted the foundations of knowledge and the rules of living on the minds of men, and yet care so little about informing their neighbors or about the peace of mankind that they will not point out which these principles are, amid the variety of opinions that distracts people. That gives us reason to distrust either their knowledge or their charity. But in truth, if there were any such innate principles, there would be no need to teach them. If people found such innate propositions stamped on their minds, they would easily be able to distinguish them from other truths that they learned afterward and deduced from them, and nothing would be easier than to know what they were and how many. There could be no more doubt about their number than there is about the number of our fingers, and then every system would probably be ready to count them out for us. But nobody I know of has yet ventured to give a catalog of them. So they cannot blame those who doubt these innate principles, since even those who require people to believe that there are such innate propositions do not tell us what they are. It is easy to foresee what would happen if different men of different sects set about giving us a list of these innate practical principles. They would put down only those that suited their particular hypotheses and served to support the doctrines of their own schools or churches. That is plain evidence that there are no such innate truths. Indeed, a great many people are so far from finding any such innate moral principles in themselves that they deny freedom to mankind, and so make men nothing but mere machines. In this way they take away not only innate moral rules but all moral rules whatever. Some cannot conceive how anything that is not a free agent can be capable of a law, and these people are left with no possibility of believing in any such rules. On that ground, those who cannot put morality and mechanism together must necessarily reject all principles of virtue; and the two are not very easy to reconcile or make consistent.

LORD HERBERT'S COMMON NOTIONS

Locke examines Herbert of Cherbury's five innate religious truths and finds them neither innate nor sufficient.

1.3.15 *Lord Herbert's innate principles examined.*—After I had written this, I was told that Lord Herbert, in his book *De Veritate*, had specified these innate principles. I immediately consulted him, hoping to find in a man of such great abilities something that might satisfy me on this point and put an end to my inquiry. In his chapter "On Natural Instinct" (p. 72, edition of 1656), I found these six marks of his common notions: 1. Priority. 2. Independence. 3. Universality. 4. Certainty. 5. Necessity, that is, as he explains it, they serve to preserve human beings. 6. Manner of conformation, that is, assent without any delay.[19] And at the end of his little treatise *On the Religion of the Layman* he says this of these innate principles: "So the truths that prevail everywhere are not confined within the bounds of any one religion. For they are inscribed in the mind itself by heaven, and are subject to no traditions, whether written or unwritten" (p. 3). And: "Our universal truths, which are inscribed in the inner court as undoubted utterances of God." Having given the marks of the innate principles, or common notions, and asserted that they are imprinted on men's minds by the hand of God, he goes on to set them down. They are these: 1. There is some supreme deity. 2. That deity ought to be worshipped. 3. Virtue joined with piety is the best way of worshipping God. 4. We must repent of our sins. 5. There is reward or punishment after this life is over. I grant that these are clear truths, and that a rational creature can hardly avoid assenting to them if they are rightly explained. Still, I think he is far from proving them to be innate impressions "inscribed in the inner court." For I must take the liberty of observing,

1.3.16 First, that these five propositions are either not all, or more than all, of the common notions written on our minds by

the finger of God, if it were reasonable to believe that any at all were written there. For there are other propositions which, even by his own rules, have as good a claim to such an origin, and may as well be admitted as innate principles, as at least some of the five he lists. One example is "do as you would be done by," and there are perhaps hundreds of others, when properly considered.

1.3.17 Second, that not all his marks are found in each of his five propositions. His first, second, and third marks fit none of them perfectly, and the first, second, third, fourth, and sixth marks fit his third, fourth, and fifth propositions only poorly. History assures us of many men, and even whole nations, who doubt or disbelieve some or all of them. But besides that, I cannot see how the third, namely, "that virtue joined with piety is the best worship of God," can be an innate principle. The name or sound "virtue" is so hard to understand and so open to uncertainty in its meaning, and the thing it stands for is so much disputed and so difficult to know. So this can be only a very uncertain rule of human practice, of very little help in the conduct of our lives, and it is therefore quite unfit to be put forward as an innate practical principle.

1.3.18 For let us consider what this proposition means (for it is the sense, not the sound, that is and must be the principle or common notion). The proposition is "virtue is the best worship of God," that is, virtue is most acceptable to him. Virtue is most commonly taken for those actions that are counted praiseworthy according to the differing opinions of various countries. If it is taken that way, this proposition will be so far from being certain that it will not even be true. Virtue may instead be taken for actions that conform to God's will, or to the rule God has prescribed, which is the true and only measure of virtue when "virtue" is used to signify what is right and good in its own nature. Taken that way, this proposition, "that virtue is the best worship of God," will be perfectly true and certain, but of very little use

19 Edward Herbert, Lord Herbert of Cherbury (1583–1648), whose *De Veritate* (1624) set out "common notions" of religion; he is often called the father of English deism.

in human life. For it will amount to no more than this: "that God is pleased when people do what he commands." A man may know for certain that this is true without knowing what it is that God commands, and so be as far from any rule or principle of action as he was before. And I think very few will take a proposition that amounts to no more than this, "that God is pleased when people do what he himself commands," for an innate moral principle written on the minds of all men (however true and certain it may be), since it teaches so little. Anyone who does so will have reason to think hundreds of propositions are innate principles. There are many with as good a claim to be accepted as such, which nobody has ever yet put in that rank.

1.3.19 Nor is the fourth proposition (namely, "men must repent of their sins") much more instructive, until it is set down which actions are meant by sins. For the word "peccata," or sins, is usually used to signify in general bad actions that will bring punishment on those who do them. What great principle of morality can it be to tell us that we should be sorry for what will bring harm on us, and stop doing it, if we do not know which particular actions will do so? This is indeed a very true proposition. It is fit to be impressed on, and accepted by, those who are supposed to have been taught which actions of every kind are sins. But neither this nor the previous one can be imagined to be an innate principle. Nor would either be of any use if it were innate, unless the particular measures and limits of all virtues and vices were engraved in men's minds and were innate principles too, which I think is very much to be doubted. And so I imagine it will hardly seem possible that God should engrave principles in men's minds in words of uncertain meaning, such as "virtues" and "sins," which stand for different things among different people. Indeed, these principles cannot be supposed to be in words at all. For the words in most of them are very general names, which cannot be understood except by knowing the particulars included under them. And in practical cases, the measures must be taken from knowledge of the actions themselves and of the rules for them, abstracted from words and

prior to any knowledge of names. A man would have to know these rules whatever language he happened to learn, whether English or Japanese. He would have to know them even if he learned no language at all, or never understood the use of words, as happens with people who are deaf and cannot speak. Suppose it is shown that people who know no words, or who have not been taught by the laws and customs of their country, know that it is part of the worship of God not to kill another man; not to have relations with more than one woman; not to procure an abortion; not to abandon their children; not to take from another what is his, even though we need it ourselves, but on the contrary to relieve and supply his needs; and that whenever we have done the contrary we ought to repent, be sorry, and resolve not to do it again. When, I say, it is proved that all people actually know and accept all these, and a thousand other such rules, all of which fall under the two general words used above, namely, "virtutes et peccata," virtues and sins, there will be more reason to admit these and the like as common notions and practical principles. Yet even then, universal consent (if there were any in moral principles) to truths that can be known in some other way would hardly prove them innate, and that is all I am contending for.

1.3.20 *Objection that innate principles may be corrupted, answered.*— There is a very ready but not very relevant answer to all this: that the innate principles of morality may be darkened by education and custom, and by the general opinion of those we live among, and at last be completely worn out of men's minds. It will not count for much to offer it here. If this claim of theirs is true, it completely removes the argument from universal consent by which they try to prove this opinion of innate principles. The only way out is for these men to think it reasonable that their private convictions, or those of their party, should pass for universal consent. That is done not infrequently, when men who presume themselves the only masters of right reason cast aside the votes and opinions of the rest of mankind as not worth counting. And then their argument runs like this: "The prin-

ciples that all mankind accept as true are innate. The principles that men of right reason admit are the principles accepted by all mankind. We, and those who think as we do, are men of reason. Therefore, since we agree, our principles are innate." That is a very pretty way of arguing, and a shortcut to infallibility. Otherwise it will be hard to understand how there can be some principles that all men acknowledge and agree on, and yet not one of those principles has escaped being blotted out of the minds of many men by corrupt custom and bad education. That is to say that all men accept them, and yet many men deny and dissent from them. And indeed the supposition of such first principles will do us very little good. We shall be as much at a loss with them as without them if they can be altered or lost in us by any human power, such as the will of our teachers or the opinions of our companions. Despite all this boasting of first principles and innate light, we shall be as much in the dark and in uncertainty as if there were no such thing at all. For having no rule comes to the same thing as having one that will bend any way, or as not knowing which is the right one among various and contrary rules. But concerning innate principles, I ask these men to say whether they can or cannot be blurred and blotted out by education and custom. If they cannot, we must find them in all mankind alike, and they must be clear in everybody. And if they can be altered by adventitious notions, then we must find them clearest and most evident nearest their source, in children and uneducated people, who have received the fewest impressions from outside opinions. Let them take whichever side they please. They will certainly find it inconsistent with visible matters of fact and daily observation.

1.3.21 *Contrary principles in the world.*—I readily grant that there are a great many opinions that people of different countries, upbringing, and temperament accept and embrace as first and unquestionable principles. Many of these cannot possibly be true, both because of their absurdity and because they contradict one another. Yet all these propositions, however far from reason, are so sacred somewhere or other that people will

sooner part with their lives, and with whatever is dearest to them, than allow themselves to doubt their truth or others to question it. This is true even of people of good understanding in other matters.

HOW MEN COME BY THEIR PRINCIPLES

Doctrines taught in childhood come to seem innate because no one remembers learning them.

1.3.22 *How men commonly come by their principles.*—However strange this may seem, it is confirmed by everyday experience. And perhaps it will not seem so remarkable if we consider the ways and steps by which it comes about. Doctrines with no better origin than a nurse's superstition or an old woman's authority may, through length of time and the agreement of neighbors, really grow into the dignity of principles in religion or morality. For there are people who take care (as they put it) to give children good principles, and there are few who do not have a set of such principles for them, which they believe in. These people instill into the unwary and as yet unprejudiced understanding (for white paper receives any characters) the doctrines they want the children to retain and profess. These doctrines are taught them as soon as they have any understanding, and are confirmed to them continually as they grow up. They are confirmed either by the open profession or by the tacit consent of everyone the children have to do with, or at least of those whose wisdom, knowledge, and piety they respect. And these people never allow the propositions to be mentioned except as the basis and foundation on which they build their religion and morals. By these means the doctrines come to have the reputation of unquestionable, self-evident, and innate truths.

1.3.23 To this we may add that when people instructed in this way have grown up and reflect on their own minds, they cannot find anything older there than the opinions they were taught before their memory began to keep a record of their actions, or to date the time when anything new appeared to them. They

cannot find in themselves where these propositions came from. So they have no hesitation in concluding that the propositions were certainly the imprint of God and nature on their minds, and not taught them by anyone else. They hold these opinions and submit to them with veneration, as many do to their parents. They do not do this because it is natural, and children do not do it where they are not taught to. They do it because they have always been brought up that way and have no memory of when this respect began, so they think it is natural.

1.3.24 This will seem very likely, and almost unavoidable, if we consider the nature of mankind and the constitution of human affairs. Most people cannot live without spending their time in the daily labor of their occupation. Nor can they be at peace in their minds without some foundation or principle to rest their thoughts on. There is hardly anyone so unsettled and superficial in his understanding that he does not have some revered propositions. These serve him as the principles on which he bases his reasoning, and by which he judges truth and falsehood, right and wrong. Some lack the skill and leisure to examine them, others lack the inclination, and some are taught that they ought not to examine them. So there are few to be found whose ignorance, laziness, education, or haste does not lead them to take these propositions on trust.

1.3.25 This is plainly the case with all children and young people. Custom is a greater power than nature, and it seldom fails to make them worship as divine whatever it has accustomed them to bow their minds and submit their understandings to. So it is no wonder that grown men, whether absorbed in the necessary business of life or eager in the pursuit of pleasure, do not sit down seriously to examine their own beliefs. That is especially true when one of their principles is that principles ought not to be questioned. And even if people had the leisure, the ability, and the will, is there almost anyone who would dare to shake the foundations of all his past thoughts and actions, and bear to bring on himself the shame of having been wholly mistaken and in error for a long time? Who is bold enough to

face the reproach that is everywhere ready for those who dare to dissent from the accepted opinions of their country or party? Anyone who has the least doubt about any of the common opinions is sure to be called eccentric, skeptic, or atheist. And where is the man who can patiently prepare himself to bear those names? And he will be much more afraid to question those principles when he thinks of them, as most people do, as standards set up by God in his mind to be the rule and touchstone of all his other opinions. And what can keep him from thinking them sacred, when he finds them the earliest of his own thoughts and the most revered by others?

1.3.26 It is easy to imagine how, by these means, people come to worship the idols that have been set up in their minds. They grow fond of the notions they have long been familiar with there, and stamp the marks of divinity on absurdities and errors. They become zealous devotees of bulls and monkeys, and they contend, fight, and die in defense of their opinions: "For each holds that the only gods to be worshipped are those he himself worships." The reasoning faculties of the soul are almost constantly employed, though not always carefully or wisely. Yet in most people they would not know how to move, for lack of a foundation and footing;[20] for most people do not get to the bottom of the principles of knowledge and trace truth to its source and origin. Some do not, through laziness or other occupations, and others cannot, for lack of time or real help or for other reasons. So it is natural and almost unavoidable for them to settle for some borrowed principles. These are reputed and presumed to be the clear proofs of other things, and so they are thought not to need any other proof themselves. Suppose someone takes any of these into his mind and keeps them there with the reverence usually paid to principles, never venturing to examine them, but accustoming himself to believe them because they are to be believed. Such a person may take up any absurdity from his education and the fashions of his country as an innate prin-

20 The Latin is from Juvenal, *Satires* 15.37–38, mocking the rival animal cults of two Egyptian towns.

ciple. And by long poring over the same objects he may so dim his sight as to take monsters lodged in his own brain for the images of the Deity and the workmanship of his hands.

1.3.27 *Principles must be examined.*—How many people arrive by this process at principles they believe innate can easily be seen in the variety of opposing principles held and fought for by all sorts and ranks of people. Some may deny that this is the way most people come to the assurance they have of the truth and evidence of their principles. They will perhaps find it hard to account in any other way for the contrary beliefs that are firmly believed and confidently asserted, and that great numbers are ready at any time to seal with their blood. And indeed, if it is the privilege of innate principles to be accepted on their own authority, without examination, I do not know what may not be believed, or how anyone's principles can be questioned. If they may and ought to be examined and tested, I would like to know how first and innate principles can be tested. Or at least it is reasonable to ask for the marks and characteristics by which the genuine innate principles may be distinguished from others. Then, amid the great variety of claimants, I may be kept from mistakes on so important a point as this. When this is done, I shall be ready to embrace such welcome and useful propositions. Until then I may modestly doubt, since I fear that universal consent, which is the only mark produced, will hardly be enough to direct my choice and assure me of any innate principles. From what has been said, I think it is beyond doubt that there are no practical principles on which all men agree, and therefore none that are innate.

NO INNATE IDEAS

Principles cannot be innate unless their ideas are, and ideas such as identity and God are not.

1.4.1 *Principles not innate unless their ideas are innate.*—Those who would persuade us that there are innate principles took them all together in the lump. If they had considered separately the parts

from which those propositions are made, they would perhaps not have been so quick to believe they were innate. For if the ideas that made up those truths were not innate, it was impossible that the propositions made up of them should be innate, or that the knowledge of them should be born with us. If the ideas are not innate, there was a time when the mind was without those principles. And then the principles will not be innate, but will be derived from some other source. For where the ideas themselves are absent, there can be no knowledge, no assent, and no mental or verbal propositions about them.

1.4.2 *Ideas, especially those belonging to principles, not born with children.*—If we consider newborn children attentively, we shall have little reason to think that they bring many ideas into the world with them. There may be some faint ideas of hunger and thirst and warmth, and of some pains they may have felt in the womb. But apart from these, there is not the least sign of any settled ideas at all in them. That holds especially for ideas corresponding to the terms in those universal propositions that are regarded as innate principles. One can see how ideas come into their minds gradually afterward. They get no more ideas, and no others, than those that experience and the observation of things that come their way supply them with. This might be enough to convince us that these ideas are not original characters stamped on the mind.

1.4.3 "It is impossible for the same thing to be and not to be" is certainly an innate principle, if there is any such thing. But can anyone think, or will anyone say, that impossibility and identity are two innate ideas? Are they ideas that all mankind have and bring into the world with them? And are they the first ideas in children, prior to all acquired ones? If they are innate, they must be. Does a child have an idea of impossibility and identity before it has one of white or black, sweet or bitter? And is it from knowledge of this principle that it concludes that wormwood rubbed on the nipple does not have the same taste it used to get from there? Is it actual knowledge of "it is impossible for the same thing to be and not to be" that makes a child distin-

guish between its mother and a stranger, or that makes it fond of the one and shrink from the other? Or does the mind regulate itself and its assent by ideas it has never yet had? Or does the understanding draw conclusions from principles it has never yet known or understood? The names "impossibility" and "identity" stand for two ideas that are far from being innate or born with us. I think it takes great care and attention to form them correctly in our understanding. They are so far from being brought into the world with us, and so remote from the thoughts of infancy and childhood, that I believe examination will show that many grown men lack them.

1.4.4 *Identity, an idea not innate.*—Take identity alone as an example. If it is a native impression, and therefore so clear and obvious to us that we must know it even from the cradle, I would gladly have someone of seven, or of seventy, settle these questions for me. A man is a creature made up of soul and body. Is he the same man when his body is changed? Euphorbus and Pythagoras had the same soul. Were they the same man, though they lived several ages apart? Indeed, the rooster too had the same soul. Was it not the same as both of them?[21] This may perhaps show that our idea of sameness is not so settled and clear as to deserve to be thought innate in us. Suppose those innate ideas are not clear and distinct enough to be universally known and naturally agreed on. Then they cannot be the subjects of universal and undoubted truths, and will inevitably cause perpetual uncertainty. For I suppose not everyone's idea of identity will be the same as that of Pythagoras and his followers. Which, then, shall be true? Which innate? Or are there two different ideas of identity, both innate?

1.4.5 And let no one think that the questions I have raised here about the identity of man are mere empty speculations. Even if they were, that would be enough to show that there was no innate idea of identity in men's understandings. Anyone who reflects a little attentively on the resurrection may find it not

21 Pythagoras claimed to have been the Trojan warrior Euphorbus in an earlier life; in Lucian's satire *The Dream, or the Cock*, his soul later lives in a rooster.

easy to decide for himself what makes the same man, or what identity consists in. On the last day divine justice will bring to judgment the very same persons who did well or ill in this life, to be happy or miserable in the next. Whoever considers this will not be quick to think that he, and everyone, even children themselves, naturally have a clear idea of identity.

1.4.6 *Whole and part not innate ideas.*—Let us examine the mathematical principle "that a whole is bigger than a part." This, I take it, is counted among innate principles. I am sure it has as good a claim as any to be thought so. Yet nobody can think it is innate once he considers the ideas it contains. "Whole" and "part" are purely relative. The positive ideas to which they properly and immediately belong are extension and number, and whole and part are relations of these alone. So if whole and part are innate ideas, extension and number must be innate too, since it is impossible to have an idea of a relation without having any idea of the thing to which it belongs and on which it is founded. Now I leave it to the champions of innate principles to consider whether the ideas of extension and number are naturally imprinted on men's minds.

1.4.7 *Ideas of worship not innate.*—"That God is to be worshipped" is without doubt as great a truth as any that can enter the mind of man, and it deserves first place among all practical principles. Yet it can by no means be thought innate unless the ideas of God and worship are innate. The idea the term "worship" stands for is not in the understanding of children as a character stamped on the mind at its very beginning. I think anyone will readily grant this who considers how few grown men have a clear and distinct notion of it. And I suppose nothing could be more ridiculous than to say that children have this practical principle, "that God is to be worshipped," innate in them, and yet do not know what that worship of God is which is their duty. But to pass over this:

THE IDEA OF GOD

Whole nations lack any notion of God, and those who have one conceive him very differently.

1.4.8 *Idea of God not innate.*—If any idea can be imagined to be innate, the idea of God may, for many reasons, be thought so above all others. For it is hard to conceive how there could be innate moral principles without an innate idea of a Deity: without a notion of a lawmaker, it is impossible to have a notion of a law and of an obligation to observe it. Besides the atheists noted among the ancients and left branded in the records of history, has not navigation in these recent ages discovered whole nations, at the Bay of Soldania[22], in Brazil[23], in Boranday[24], in the Caribbean islands, and elsewhere, among whom there was no notion of a God and no religion?[25] Nicolás del Techo, in his letters from Paraguay on the conversion of the Caaiguas, writes these words[26]: "I found that this people has no name that signifies God or the human soul; it has no sacred rites, no idols." These are examples of nations where uncultivated nature has been left to itself, without the help of letters and discipline and the improvements of arts and sciences. But there are other peoples who have enjoyed these things in very great measure. Yet they lack the idea and knowledge of God, because they have not applied their thoughts properly in this direction. I have no doubt it will surprise others, as it did me, to find the Siamese

22 LOCKE'S NOTE. Roe, in Thévenot, p. 2.

TRANSLATOR'S NOTE. Sir Thomas Roe's account of his embassy, printed in Thévenot's collection.

23 LOCKE'S NOTE. Jean de Léry, ch. 16.

24 LOCKE'S NOTE. Martinière 201/322. Terry 17/545 and 23/545. Ovington 489/606.

TRANSLATOR'S NOTE. Travel writers Pierre-Martin de La Martinière, Edward Terry, and John Ovington.

25 "Soldania" (Saldanha) was the name English travelers of the period gave to Table Bay at the Cape of Good Hope.

26 LOCKE'S NOTE. *Relatio triplex de rebus Indicis Caaiguarum*, 43/70.

TRANSLATOR'S NOTE. A Jesuit report (1654) on the Caaiguá people of the Paraguay region.

among them.[27] But on this point let them consult the King of France's recent envoy there[28], who gives no better account of the Chinese themselves[29]. And if we will not believe La Loubère, there are the missionaries in China, and even the Jesuits themselves, who are great admirers of the Chinese. They all agree to a man, and will convince us, that the sect of the literati, or learned, are all atheists. These keep to the old religion of China and are the ruling party there. [See Navarrete, in the Collection of Voyages, vol. 1,[30] and Historia cultus Sinensium.] And perhaps we should look attentively at the lives and talk of people not so far away. If we did, we would have too much reason to fear that many in more civilized countries have no very strong and clear impressions of a Deity on their minds, and that the complaints of atheism made from the pulpit are not without cause. Only some profligate wretches admit to it too shamelessly now. Yet perhaps we would hear more of it from others than we do, if fear of the magistrate's sword or of their neighbors' censure did not tie people's tongues. If the fear of punishment or shame were taken away, their tongues would proclaim their atheism as openly as their lives do

1.4.9 But even if all mankind everywhere had a notion of a God (though history tells us the contrary), it would not follow that the idea of him was innate. Even if no nation were found without a name for him and a few dim notions of him, that would not prove these to be natural impressions on the mind. The names of fire, the sun, heat, or number do not prove the ideas they stand for to be innate just because the names of those things, and the ideas of them, are so universally received and known among mankind. Nor, on the other hand, is the lack of

27 Nicolás del Techo (1611–1685), Jesuit missionary and historian of Paraguay; the Caaiguas were an Indigenous people of the region.

28 LOCKE'S NOTE. La Loubère, *Du Royaume de Siam*, vol. 1, ch. 9, sec. 15; ch. 20, sec. 22; and ch. 22, sec. 6.

29 LOCKE'S NOTE. Ibid., vol. 1, ch. 20, sec. 4, and ch. 23.

30 Simon de La Loubère was the French envoy to Siam in 1687–88 (*Du Royaume de Siam*, 1691). Domingo Fernández Navarrete, a Dominican missionary in China, had his treatises printed in Churchill's *Collection of Voyages* (1704).

such a name, or the absence of such a notion from men's minds, any argument against the existence of a God. It would no more be one than it would be a proof that there was no lodestone in the world because a great part of mankind had neither a notion of any such thing nor a name for it. Nor could it be even the semblance of an argument that there are no distinct and various species of angels or intelligent beings above us, because we have no ideas of such distinct species, or names for them. Men are furnished with words by the common language of their own countries, and so they can hardly avoid having some kind of ideas of those things whose names the people they talk with often have occasion to mention to them. The idea is likely to sink deeper and spread farther if the name carries with it the notion of excellence, greatness, or something extraordinary; if apprehension and concern accompany it; or if the fear of absolute and irresistible power presses it on the mind. This is especially so if it is an idea that agrees with the common light of reason and can be naturally deduced from every part of our knowledge, as the idea of a God can. For the visible marks of extraordinary wisdom and power appear so plainly in all the works of creation that a rational creature who will only reflect seriously on them cannot fail to discover a Deity. And the discovery of such a being must necessarily have a great influence on the minds of all who have heard of it even once, and it carries such a weight of thought and communication with it. So it seems stranger to me that a whole nation of men should be found anywhere so brutish as to lack the notion of a God than that they should be without any notion of numbers or fire.

1.4.10 Suppose the name of God has once been used in any part of the world to express a superior, powerful, wise, invisible being. The fitness of such a notion to the principles of common reason, and the interest men will always have in mentioning it often, must necessarily spread it far and wide and carry it down to all generations. Yet the general acceptance of this name, and the imperfect and unsteady notions it conveys to the unthinking part of mankind, do not prove the idea to be innate. They prove

only that those who made the discovery had made a right use of their reason, had thought maturely about the causes of things, and had traced them to their origin. And once other, less reflective people had received so important a notion from them, it could not easily be lost again.

1.4.11 This is all that could be inferred from the notion of a God, even if it were found universally in all the tribes of mankind and generally acknowledged by adults in all countries. For as I imagine, the acknowledgment of a God is general only in that sense and no further. If that is sufficient to prove the idea of God innate, it will equally prove the idea of fire innate. I think it may truly be said that there is not a person in the world who has a notion of a God who does not also have the idea of fire. Suppose a colony of young children were placed on an island where there was no fire. I do not doubt that they would have neither any notion of such a thing nor a name for it, however generally it was received and known in all the rest of the world. And perhaps their minds would be just as far from any name or notion of a God. That would last until someone among them had turned his thoughts to inquiring into the constitution and causes of things, which would easily lead him to the notion of a God. Once he had taught it to others, reason and the natural tendency of their own thoughts would afterward spread it and keep it alive among them.

1.4.12 *That it suits God's goodness that all men should have an idea of him, and that he therefore naturally imprinted it: answered.*—It is indeed urged that it suits the goodness of God to imprint characters and notions of himself on men's minds, and not to leave them in the dark and in doubt about so grand a concern. By that means, too, he would secure for himself the homage and veneration due from so intelligent a creature as man. And therefore, it is said, he has done it.

This argument, if it has any force, will prove much more than those who use it in this case expect. Suppose we may conclude that God has done for men everything that men judge is best for them, because it suits his goodness to do so. Then it will prove

not only that God has imprinted an idea of himself on men's minds. It will prove that he has plainly stamped there, in clear letters, everything men ought to know or believe about him and everything they ought to do in obedience to his will, and that he has given them a will and affections in keeping with it. No doubt everyone will think this better for men than that they should grope after knowledge in the dark, as St. Paul tells us all nations did after God (Acts 17:27). They will also think it better than that their wills should clash with their understandings and their appetites cross their duty. The Roman Catholics say it is best for men, and so suits the goodness of God, that there should be an infallible judge of controversies on earth; and therefore there is one. And I, by the same reasoning, say it is better for men that every man should himself be infallible. I leave them to consider whether the force of this argument will make them think that every man is so. I think it a very good argument to say: the infinitely wise God has made it so, and therefore it is best. But it seems to me a little too much confidence in our own wisdom to say, "I think it best, and therefore God has made it so." And in the matter at hand, it will be useless to argue from such a premise that God has done so, when certain experience shows us that he has not. But the goodness of God has not failed men for lack of such original impressions of knowledge, or ideas stamped on the mind. He has furnished man with faculties that will serve to discover sufficiently everything required for the purpose of such a being. And I have no doubt that I can show that a man may attain a knowledge of a God, and of other things that concern him, by the right use of his natural abilities and without any innate principles. God endowed man with the faculties of knowing that he has. Having done so, he was no more obliged by his goodness to plant those innate notions in his mind than he was obliged, having given him reason, hands, and materials, to build him bridges or houses. Some people in the world, however gifted, either totally lack such things or are poorly provided with them, just as others are wholly without ideas of God and principles of morality, or at least have only

very poor ones. In both cases the reason is the same. They never applied their abilities, faculties, and powers diligently in that direction, but contented themselves with the opinions, fashions, and things of their country as they found them, without looking any farther. Had you or I been born at the Bay of Soldania, our thoughts and notions might well not have gone beyond the crude ones of the Khoikhoi who live there. And had the Virginian king Apochancana been educated in England, he might perhaps have been as learned a theologian and as good a mathematician as anyone in it. The difference between him and a more cultivated Englishman lies simply in this: the exercise of his faculties was confined within the ways, customs, and notions of his own country, and never directed to any other or further inquiries. And if he had no idea of a God, it was only because he did not pursue the thoughts that would have led him to it.[31]

1.4.13 *Ideas of God vary in different men.*—I grant that if any idea were to be found imprinted on men's minds, we would have reason to expect it to be the notion of their Maker. It would be a mark God set on his own workmanship to remind man of his dependence and duty, and here the first instances of human knowledge should appear. But how late is it before any such notion can be found in children? And when we do find it there, how much more does it resemble the opinion and notion of the teacher than represent the true God? Anyone who observes the process by which children's minds attain the knowledge they have will conclude that the first impressions on their understandings are made by the objects they first and most familiarly deal with. Nor will he find the least trace of any other. It is easy to notice that their thoughts expand only as they become acquainted with a greater variety of sensible objects. They retain the ideas of these objects in their memories, and they gain the skill to combine and enlarge those ideas and put them together in various ways. How by these means they come to

31 "Apochancana" is Opechancanough (d. 1646), paramount chief of the Powhatan Confederacy in Virginia.

frame in their minds the idea men have of a Deity, I shall show later.

1.4.14 Can it be thought that the ideas men have of God are the characters and marks of himself, engraved on their minds by his own finger? We see that in the same country, under one and the same name, men have very different, indeed often contrary and inconsistent, ideas and conceptions of him. Their agreeing in a name or sound will hardly prove an innate notion of him.

1.4.15 What true or even tolerable notion of a Deity could those people have who acknowledged and worshipped hundreds? Every deity they recognized beyond one was infallible evidence of their ignorance of him. It was proof that they had no true notion of God, since unity, infinity, and eternity were excluded. Add to this their crude conceptions of the gods as bodily, expressed in their images and representations of their deities. Add, too, the love affairs, marriages, couplings, lusts, quarrels, and other base qualities they attributed to their gods. Then we shall have little reason to think that the heathen world—that is, the greatest part of mankind—had in their minds such ideas of God as he himself was the author of, out of care that they should not be mistaken about him. People argue so much from this universality of consent. But if it proves any native impressions, it will prove only this: that God imprinted a name for himself on the minds of all men who speak the same language, but not any idea. For the people who agreed in the name had at the same time very different understandings of the thing signified. They may say that the variety of deities worshipped by the heathen world were only figurative ways of expressing the various attributes of that incomprehensible being, or various parts of his providence. I answer that I will not inquire here what they may have been in their origin; but I think nobody will claim that ordinary people thought of them that way. And anyone who consults the voyage of the Bishop of Beirut, chapter 13 (not to mention other testimonies), will find that the theology of the Siamese openly acknowledges a plurality of gods. Or rather, as the Abbé de Choisy more judiciously remarks in his *Journal du voy-*

age de Siam, 107/177, it consists properly in acknowledging no God at all.[32]

If it is said that wise men of all nations came to have true conceptions of the unity and infinity of the Deity, I grant it. But then this,

First, excludes universality of consent in anything but the name. Those wise men are very few, perhaps one in a thousand, so this universality is very narrow.

Second, it seems to me plainly to prove that the truest and best notions men had of God were not imprinted. They were acquired by thought and meditation and a right use of their faculties. The wise and reflective men of the world attained true notions in this, as in other things, by a right and careful use of their thoughts and reason. Meanwhile the lazy and unreflective part of mankind, by far the greater number, picked up their notions by chance from common tradition and popular conceptions, without racking their brains much about them. And if the fact that all wise men had the notion of God is a reason to think it innate, then virtue too must be innate, for wise men have always had that as well.

1.4.16 This was evidently the case with all paganism. Jews, Christians, and Muslims acknowledge only one God, and those nations take care to teach men true notions of a God. Yet even among them, this doctrine and this care have not succeeded so far as to give men the same, true ideas of him. How many, even among us, will be found on inquiry to imagine him in the shape of a man sitting in heaven, and to have many other absurd and unfitting conceptions of him? Christians as well as Turks have had whole sects that professed this and earnestly contended for it, holding that the Deity was corporeal and of human shape. We find few among us who declare themselves anthropomorphites (though I have met some who admit it). Yet I believe that anyone who makes it his business to look may find many of that opinion

32 The Bishop of Beirut was Pierre Lambert de la Motte, a French missionary bishop whose journey to Siam was published in 1666. François-Timoléon de Choisy accompanied the French embassy to Siam of 1685.

among ignorant and uninstructed Christians. Just talk with country people of almost any age, or young people of almost any station. You will find that although the name of God is often on their lips, the notions they apply this name to are so odd, low, and pitiful that nobody could imagine they were taught by a rational man, much less that they were characters written by the finger of God himself. He has given us minds unfurnished with these ideas of himself. I do not see how this detracts any more from the goodness of God than the fact that he has sent us into the world with bodies unclothed, and that no art or skill is born with us. We are fitted with faculties to attain these things, so if we do not have them, it is a lack of industry and reflection in us, not of generosity in him. It is as certain that there is a God as that the opposite angles made by the intersection of two straight lines are equal. There was never any rational creature who sincerely set himself to examine the truth of these propositions and could fail to assent to them. And yet it is beyond doubt that there are many men who are ignorant of both, because they have not turned their thoughts that way. If anyone thinks fit to call this universal consent (and this is the utmost extent of it), I readily allow him to. But such a universal consent as this no more proves the idea of God innate than it proves the idea of such angles innate.

1.4.17 *If the idea of God is not innate, no other can be supposed innate.*—The knowledge of a God is the most natural discovery of human reason, and yet the idea of him is not innate, as I think is evident from what has been said. I imagine, then, that scarcely any other idea will be found that can claim to be. For if God has set any impression, any character, on men's understanding, it is most reasonable to expect that it would have been some clear and uniform idea of himself, as far as our weak capacities could receive so incomprehensible and infinite an object. But our minds are at first empty of the idea we are most concerned to have, and this is a strong presumption against all other innate characters. I must admit that, as far as I can observe, I can find none, and I would be glad to be told of any by someone else.

1.4.18 *The idea of substance is not innate.*—I admit there is another idea which it would be generally useful for mankind to have, since they generally talk as if they had it. That is the idea of substance, which we neither have nor can have by sensation or reflection. If nature took care to provide us with any ideas, we might well expect them to be ones we cannot procure for ourselves by our own faculties. But we see the contrary. This idea does not come by the ways through which our ideas are brought into our minds, so we have no such clear idea at all. We therefore mean nothing by the word *substance* but an uncertain supposition of we know not what, that is, of something of which we have no particular, distinct, positive idea, and which we take to be the substratum, or support, of those ideas we do know.

1.4.19 *No propositions can be innate, since no ideas are innate.*—So whatever we say about innate principles, whether speculative or practical, it would be just as plausible to say that a man has £100 sterling in his pocket, and yet to deny that he has any penny, shilling, crown, or other coin out of which the sum is made up, as to think that certain propositions are innate when the ideas they are about can by no means be supposed to be so. The general acceptance and assent given to such propositions does not at all prove that the ideas expressed in them are innate. In many cases, however the ideas got there, assent to words expressing the agreement or disagreement of such ideas will necessarily follow. Everyone who has a true idea of God and of worship will assent to the proposition "that God is to be worshipped," when it is expressed in a language he understands. And every rational man who has not thought about it today may be ready to assent to this proposition tomorrow. Yet millions of men may well be supposed to lack one or both of those ideas today. Suppose we grant that people from preliterate societies and most country people have ideas of God and worship (though talking with them will not make one quick to believe it). Even so, I think few children can be supposed to have those ideas, so they must begin to have them at some time or other. Then they will begin to assent to that proposition, and will hardly question it ever after. But

such an assent on hearing no more proves the ideas innate than it proves that a man born blind had innate ideas of the sun, or light, or saffron, or yellow. Say he has cataracts that will be operated on tomorrow. Once his sight is cleared, he will certainly assent to the proposition "that the sun is luminous" or "that saffron is yellow." If such an assent on hearing cannot prove the ideas innate, it can prove even less that the propositions made up of those ideas are innate. If people have any innate ideas, I would be glad to be told what they are and how many.

NO INNATE IDEAS IN THE MEMORY

Any idea in the mind but not in view must be remembered, and no one remembers an innate idea.

1.4.20 *No innate ideas in the memory.*—Let me add this. Suppose there are innate ideas, that is, ideas in the mind that the mind is not actually thinking of. Then they must be lodged in the memory, and must be brought into view from there by remembering. In other words, when they are remembered, they must be known to have been perceptions in the mind before—unless remembering can happen without remembering. For to remember is to perceive something with memory, or with a consciousness that it was known or perceived before. Without this, whatever idea comes into the mind is new and not remembered. This consciousness of its having been in the mind before is what distinguishes remembering from all other ways of thinking. Whatever idea was never perceived by the mind was never in the mind. Whatever idea is in the mind is either an actual perception, or else it has been an actual perception and is in the mind in such a way that the memory can make it an actual perception again. Whenever there is the actual perception of an idea without memory, the idea appears to the understanding as perfectly new and never known before. Whenever the memory brings any idea into actual view, it does so with a consciousness that the idea had been there before and was not wholly a stranger to the mind. I appeal to everyone's observation whether

this is not so. And then I ask for an instance of an idea claimed to be innate that anyone could revive and remember as an idea he had formerly known, before any impression of it by the ways to be described later. Without this consciousness of a former perception there is no remembering. Whatever idea comes into the mind without that consciousness is not remembered, or does not come out of the memory, and cannot be said to have been in the mind before it appeared. For what is neither actually in view nor in the memory is in the mind in no way at all, and it is all the same as if it had never been there. Suppose a child had the use of his eyes until he knows and distinguishes colors. But then cataracts shut the windows, and for forty or fifty years he is completely in the dark, and in that time he completely loses all memory of the ideas of colors he once had. This was the case of a blind man I once talked with. He lost his sight to smallpox when he was a child, and he had no more notion of colors than someone born blind. I ask whether anyone can say this man then had any ideas of colors in his mind, any more than one born blind? And I think nobody will say that either of them had any idea of colors in his mind at all. Then his cataracts are operated on. His restored sight conveys ideas of colors (which he does not remember) to his mind anew, and without any consciousness of a former acquaintance. These ideas he can now revive and call to mind in the dark. In this case all these ideas of colors are said to be in the mind, because they are thus in the memory: when out of view, they can be revived with a consciousness of a former acquaintance. The use I make of this is as follows. Whatever idea is in the mind without being actually in view is there only by being in the memory. If it is not in the memory, it is not in the mind. And if it is in the memory, the memory cannot bring it into actual view without a perception that it comes out of the memory, that is, a perception that it had been known before and is now remembered. If, therefore, there are any innate ideas, they must be in the memory, or else nowhere in the mind. And if they are in the memory, they can be revived without any impression from outside. Whenever they

are brought into the mind, they are remembered, that is, they bring with them a perception that they are not wholly new to it. For this is a constant and distinguishing difference between what is in the memory, or in the mind, and what is not. What is not in the memory, whenever it appears there, appears perfectly new and never known before. What is in the memory, or in the mind, does not appear new whenever the memory suggests it; the mind finds it in itself and knows it was there before. By this test we can try whether there are any innate ideas in the mind before any impression from sensation or reflection. I would very much like to meet the man who remembered any one of them, when he came to the use of reason or at any other time, and to whom they were never new after he was born. If anyone will say there are ideas in the mind that are not in the memory, I ask him to explain himself and make what he says intelligible.

1.4.21 *Principles are not innate, because they are of little use or little certainty.*—Besides what I have already said, there is another reason why I doubt that either these or any other principles are innate. I am fully persuaded that the infinitely wise God made all things in perfect wisdom. So I cannot satisfy myself why he should be supposed to print certain universal principles on men's minds. Those principles claimed to be innate that concern speculation are of no great use, and those that concern practice are not self-evident. And neither kind can be distinguished from some other truths that are not allowed to be innate. For what purpose would characters be engraved on the mind by the finger of God, if they are no clearer there than those introduced afterward, or cannot be distinguished from them? Someone may think there are innate ideas and propositions of this kind, which can be distinguished by their clearness and usefulness from everything that came into the mind from outside and was acquired. If so, it will not be hard for him to tell us which they are, and then everyone will be a fit judge of whether they are so or not. For if there are such innate ideas and impressions, plainly different from all other perceptions and knowledge, everyone will find it true in himself. I have already spoken of the

evidence of these supposed innate maxims; I shall have occasion to say more about their usefulness later.

1.4.22 *Differences in what men discover depend on how differently they apply their faculties.*—To conclude: some ideas readily present themselves to everyone's understanding. Some sorts of truth follow from any ideas as soon as the mind puts them into propositions. Other truths cannot be discovered and assented to until a train of ideas has been placed in order, the ideas properly compared, and deductions made with attention. Some truths of the first sort have been mistaken for innate because they are so generally and easily accepted. But the truth is that ideas and notions are no more born with us than arts and sciences are. It is true that some of them offer themselves to our faculties more readily than others, and are therefore more generally accepted. Yet even that depends on how the organs of our bodies and the powers of our minds happen to be employed. For God has fitted men with faculties and means to discover, receive, and retain truths, according to how those faculties are employed. The great difference found in the notions of mankind comes from the different uses to which they put their faculties. Some, and these the majority, take things on trust. They misuse their power of assent by lazily enslaving their minds to the dictates and dominion of others in doctrines that it is their duty to examine carefully, and not to swallow blindly with an implicit faith. Others apply their thoughts only to a few things. They become sufficiently acquainted with these and attain great degrees of knowledge in them, but they are ignorant of everything else, having never let their thoughts range in search of other inquiries. Take the proposition that the three angles of a triangle are equal to two right angles. It is a truth as certain as anything can be, and I think more evident than many of the propositions that pass for principles. Yet there are millions, however expert in other things, who do not know it at all, because they never set their thoughts to work on such angles. And someone who knows this proposition with certainty may still be utterly ignorant of other propositions in mathematics itself, which are as clear and evident as this one. That is

because in his search for mathematical truths he stopped his thoughts short and did not go so far. The same may happen with the notions we have of the existence of a Deity. There is no truth a man can more evidently make out for himself than the existence of a God. Yet a man may content himself with things as he finds them in this world, as they serve his pleasures and passions. If he does not inquire a little further into their causes, ends, and admirable design, and pursue those thoughts with diligence and attention, he may live a long time without any notion of such a being. And if talk has put such a notion into someone's head, he may perhaps believe it. But if he has never examined it, his knowledge of it will be no more perfect than that of a man who has been told that the three angles of a triangle are equal to two right angles and takes it on trust without examining the demonstration. Such a man may give his assent to it as a probable opinion, but he has no knowledge of its truth, even though his faculties, if carefully employed, were able to make it clear and evident to him. But this is only in passing. It shows how much our knowledge depends on the right use of the powers nature has given us, and how little on innate principles that are vainly supposed to be in all mankind to guide them. If such principles were there, all men could not fail to know them, or else they would be there to no purpose. And since not all men know them, and they cannot be distinguished from other truths that come to us from outside, we may well conclude there are no such principles.

THINKING FOR ONESELF

Locke urges readers to seek knowledge in things themselves rather than in borrowed opinions.

1.4.23 *Men must think and know for themselves.*—Some men will be inclined to call this doubting of innate principles a pulling up of the old foundations of knowledge and certainty. What censure I may deserve from them, I cannot tell. I persuade myself, at least, that the way I have followed agrees with truth and there-

fore lays those foundations more securely. This much I am certain of: in the discussion that follows I have not made it my business either to abandon or to follow any authority. Truth has been my only aim. Wherever it has seemed to lead, my thoughts have followed impartially, without caring whether anyone else's footsteps lay that way or not. Not that I lack due respect for other men's opinions; but after all, the greatest reverence is due to truth. I hope it will not be thought arrogant to say that perhaps we would make greater progress in discovering rational and contemplative knowledge if we sought it at the source, in the consideration of things themselves, and used our own thoughts rather than other men's to find it. For I think we may as reasonably hope to see with other men's eyes as to know by other men's understandings. As much of truth and reason as we ourselves consider and comprehend, so much real and true knowledge do we possess. Having other men's opinions floating in our brains does not make us one bit more knowing, even if the opinions happen to be true. What was knowledge in them is mere opinionatedness in us, as long as we give our assent only to revered names. We do not, as they did, use our own reason to understand the truths that gave them their reputation. Aristotle was certainly a knowledgeable man, but nobody ever thought him so because he blindly embraced and confidently repeated the opinions of another. And if taking up another's principles without examining them did not make him a philosopher, I suppose it will hardly make anyone else one. In the sciences, each person has as much as he really knows and comprehends. What he merely believes and takes on trust are only scraps. However good they are as part of the whole cloth, they add little to the stock of the one who gathers them. Such borrowed wealth is like fairy money: though it was gold in the hand he received it from, it will turn out to be nothing but leaves and dust when he comes to use it.[33]

1.4.24 *Where the opinion of innate principles comes from.*—Men found certain general propositions that could not be doubted as

33 In folklore, gold given by fairies turned to leaves or dust once taken away.

soon as they were understood. It was, I know, a short and easy way to conclude that these were innate. Once this was accepted, it spared the lazy the trouble of searching. It also stopped the doubtful from inquiring into anything that had once been labeled innate. And it was no small advantage to those who set themselves up as masters and teachers to make this the principle of principles: "that principles must not be questioned." Once they had established the tenet that there are innate principles, their followers were obliged to accept certain doctrines as innate. This drew them away from the use of their own reason and judgment, and set them to believing those doctrines and taking them on trust without further examination. In this posture of blind credulity they could more easily be governed by, and made useful to, a certain sort of men who had the skill and the office to instill principles in them and guide them. Nor is it a small power over another man to have the authority to be the dictator of principles and the teacher of unquestionable truths. Such a teacher can make a man swallow, as an innate principle, whatever serves the teacher's own purpose. Yet had they examined the ways by which men came to know many universal truths, they would have found something different. These truths arise in men's minds from the very being of things themselves, when duly considered. And they were discovered by applying faculties that nature fitted to receive and judge of them, when those faculties were duly employed on them.

1.4.25 *Conclusion.*—The design of the following discourse is to show how the understanding proceeds in this. I will turn to that once I have first said one thing. Up to now, to clear my way to the foundations that I take to be the only true ones on which to establish whatever notions we can have of our own knowledge, I have had to give an account of my reasons for doubting innate principles. Some of the arguments against them rise from commonly received opinions, so I have been forced to take several things for granted. That is hardly avoidable for anyone whose task is to show that a tenet is false or improbable. It happens in controversy as it does in the assault of towns. If only the ground

on which the batteries are built is firm, nobody asks further whom it was borrowed from or whom it belongs to, so long as it gives a fit rise for the present purpose. But in the rest of this discourse I mean to raise a building that is uniform and consistent with itself, as far as my own experience and observation will help me. I hope to put it on such a basis that I will not need to shore it up with props and buttresses resting on borrowed or begged foundations. Or at least, if mine proves a castle in the air, I will try to make it all of a piece, so that it hangs together. Here I warn the reader not to expect undeniable, compelling demonstrations, unless I may be allowed the privilege, which others often assume, of taking my principles for granted. Then, I don't doubt, I can demonstrate too. All I will say for the principles I proceed on is that I can only appeal to people's own unprejudiced experience and observation as to whether they are true or not. That is enough for someone who claims no more than to set down, candidly and freely, his own conjectures on a subject that lies somewhat in the dark, with no other design than an unbiased inquiry after truth.

Book II: Of Ideas (Chapters I–XXI)

All ideas come from sensation and reflection: simple ideas, primary and secondary qualities, the operations of the mind, space, time, number, infinity, and power, freedom and the will.

CHAPTER I. OF IDEAS IN GENERAL, AND THEIR ORIGINAL.

2.1.1 *Idea is the object of thinking.*—Every man is conscious to himself that he thinks, and what his mind is applied to while thinking is the ideas that are there. So it is beyond doubt that people have various ideas in their minds, such as those expressed by the words whiteness, hardness, sweetness, thinking, motion, man, elephant, army, drunkenness, and others. The first thing to inquire, then, is how he comes by them. I know it is a received doctrine that people have native ideas and original characters stamped on their minds in their very first being. I have already examined this opinion at length. I suppose what I said in the previous book will be much more easily accepted once I have shown where the understanding can get all the ideas it has, and by what ways and degrees they can come into the mind. For this I will appeal to everyone's own observation and experience.

2.1.2 *All ideas come from sensation or reflection.*—Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas. How does it come to be furnished? Where does it get that vast store which the busy and boundless fancy of man has painted on it, with an almost endless variety? Where does it get all the materials of reason and knowledge? To this I answer in one word: from experience. All our knowledge is founded on that, and from that it ultimately derives itself. Our

observation, employed either about external sensible objects or about the internal operations of our minds, perceived and reflected on by ourselves, is what supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from which all the ideas we have, or can naturally have, spring.

2.1.3 *The objects of sensation one source of ideas.*—First, our senses, dealing with particular sensible objects, convey into the mind various distinct perceptions of things, according to the various ways in which those objects affect them. This is how we come by the ideas we have of yellow, white, heat, cold, soft, hard, bitter, sweet, and all those we call sensible qualities. When I say the senses convey these into the mind, I mean that they convey from external objects into the mind what produces those perceptions there. This great source of most of the ideas we have depends wholly on our senses and is passed by them to the understanding. I call it *sensation*.

2.1.4 *The operations of our minds the other source of them.*—Secondly, the other fountain from which experience furnishes the understanding with ideas is the perception of the operations of our own mind within us, as it is employed about the ideas it has got. When the soul comes to reflect on and consider these operations, they furnish the understanding with another set of ideas, which could not be had from things outside. Such are perception, thinking, doubting, believing, reasoning, knowing, willing, and all the different actings of our own minds. We are conscious of these and observe them in ourselves, and so we receive them into our understandings as distinct ideas, just as we do from bodies affecting our senses. This source of ideas every man has wholly in himself. It is not sense, since it has nothing to do with external objects, but it is very like it, and might properly enough be called internal sense. But as I call the other *sensation,* so I call this *reflection*, since the ideas it provides are only those the mind gets by reflecting on its own operations within itself. By reflection, then, in the rest of this discourse, I mean the notice the mind takes of its own operations and the

manner of them, by which there come to be ideas of these operations in the understanding. These two, I say, namely external material things, as the objects of sensation, and the operations of our own minds within, as the objects of reflection, are to me the only originals from which all our ideas take their beginnings. I use the term *operations* here in a broad sense. It includes not only the actions of the mind about its ideas but some sorts of passions that sometimes arise from them, such as the satisfaction or uneasiness arising from any thought.

2.1.5 *All our ideas are of the one or the other of these.*—The understanding seems to me not to have the least glimmering of any ideas that it does not receive from one of these two. External objects furnish the mind with the ideas of sensible qualities, which are all the different perceptions they produce in us. The mind furnishes the understanding with ideas of its own operations.

When we have taken a full survey of these, and of their various modes, combinations, and relations, we will find that they contain our whole stock of ideas, and that we have nothing in our minds that did not come in one of these two ways. Let anyone examine his own thoughts and search thoroughly into his understanding. Then let him tell me whether all the original ideas he has there are of anything other than the objects of his senses or the operations of his mind, considered as objects of his reflection. However great a mass of knowledge he imagines is lodged there, on a strict look he will see that he has no idea in his mind that one of these two has not imprinted. Those ideas may, though, be compounded and enlarged by the understanding with infinite variety, as we will see later.

2.1.6 *Observable in children.*—Anyone who attentively considers the state of a child when he first comes into the world will have little reason to think him stocked with plenty of ideas to be the matter of his future knowledge. It is by degrees that he comes to be furnished with them. The ideas of obvious and familiar qualities imprint themselves before the memory begins to keep a record of time or order. Yet some unusual qualities often come

our way so late that few people cannot remember the beginning of their acquaintance with them. If it were worth the trouble, a child could no doubt be so managed as to have only a very few even of the ordinary ideas until he was grown up. But everyone born into the world is surrounded with bodies that constantly and variously affect them. So a variety of ideas is imprinted on children's minds whether anyone takes care of it or not. Light and colors are busy on every side as soon as the eye is open, and sounds and some tangible qualities never fail to solicit their proper senses and force an entrance into the mind. Still, I think it will easily be granted that a child kept until he was grown in a place where he never saw anything but black and white would have no more ideas of scarlet or green than someone who from childhood never tasted an oyster or a pineapple has of those particular flavors.

2.1.7 *People are differently furnished with these, according to the different objects they deal with.*—People, then, come to be furnished with fewer or more simple ideas from outside according as the objects they deal with offer greater or less variety. They are furnished with ideas from the operations of their minds within according as they reflect on them more or less. Someone who contemplates the operations of his mind cannot fail to have plain and clear ideas of them. Yet unless he turns his thoughts that way and considers them attentively, he will no more have clear and distinct ideas of all the operations of his mind, and of all that may be observed in it, than a person will have all the particular ideas of a landscape, or of the parts and motions of a clock, if he will not turn his eyes to it and attentively take note of all its parts. The picture or the clock may be placed so that it comes in his way every day. Yet he will have only a confused idea of all the parts it is made up of until he applies himself attentively to consider each of them in particular.

2.1.8 *Ideas of reflection later, because they need attention.*—This shows us why most children are fairly late in getting ideas of the operations of their own minds. It also shows why some never have very clear or complete ideas of most of them their whole

lives. These operations pass there continually, but they are like floating visions. They do not make impressions deep enough to leave clear, distinct, lasting ideas in the mind until the understanding turns inward on itself, reflects on its own operations, and makes them the objects of its own contemplation. Children, when they first come into the world, are surrounded with a world of new things. These constantly solicit their senses and keep drawing the mind to them, and the mind is eager to notice what is new and apt to be delighted with the variety of changing objects. So the first years are usually spent and taken up in looking outward. People's business in those years is to get acquainted with what is to be found outside. Growing up with their attention constantly on outward sensation, they seldom reflect much on what passes within them until they reach riper years, and some hardly ever do.

2.1.9 *The soul begins to have ideas when it begins to perceive.*—To ask when a man first has any ideas is to ask when he begins to perceive, for having ideas and perception are the same thing. I know there is an opinion that the soul always thinks. On this view it has the actual perception of ideas in itself constantly, as long as it exists, and actual thinking is as inseparable from the soul as actual extension is from the body. If that were true, to inquire into the beginning of a man's ideas would be the same as inquiring into the beginning of his soul. On this account the soul and its ideas, like the body and its extension, will both begin to exist at the same time.[1]

2.1.10 *The soul does not always think, for this lacks proof.*—Whether the soul is supposed to exist before, at the same time as, or some time after the first rudiments of organization or the beginnings of life in the body, I leave to be disputed by those who have thought that matter through better. I confess that mine is one of those dull souls that does not perceive itself always contemplating ideas. Nor can I conceive it any more necessary for the soul always to think than for the body always to move. The percep-

1 The opinion is that of Descartes and his followers, for whom thought is the essence of mind as extension is the essence of body.

tion of ideas is (as I conceive it) to the soul what motion is to the body: not its essence, but one of its operations. Therefore, however much thinking is supposed to be the proper action of the soul, there is no need to suppose that it is always thinking, always in action. That, perhaps, is the privilege of the infinite Author and Preserver of things, who never slumbers nor sleeps. It does not belong to any finite being, at least not to the soul of man. We know for certain, by experience, that we sometimes think. From this we draw the infallible conclusion that there is something in us that has a power to think. But whether that substance thinks perpetually or not, we can be assured no further than experience informs us. To say that actual thinking is essential to the soul and inseparable from it is to beg the question, not to prove it by reason. And proof is required, if it is not a self-evident proposition. Whether "the soul always thinks" is a self-evident proposition that everyone assents to on first hearing, I appeal to mankind. It is in doubt whether I thought at all last night or not. The question concerns a matter of fact, so it is begging it to bring as proof a hypothesis that is the very thing in dispute. That way one can prove anything. We need only suppose that all watches think while the balance beats, and it is sufficiently proved, beyond doubt, that my watch thought all last night. But anyone who does not want to deceive himself ought to build his hypothesis on matter of fact and make it out by sensible experience. He should not presume a matter of fact because of his hypothesis, that is, because he supposes it to be so. That way of proving comes to this: that I must necessarily have been thinking all last night because someone else supposes I always think, though I myself cannot perceive that I always do.

People in love with their opinions may not only suppose what is in question but also allege a wrong matter of fact. How else could anyone attribute to me the inference "that a thing does not exist because we are not sensible of it in our sleep"? I do not say there is no soul in a man because he is not sensible of it in his sleep. But I do say that he cannot think at any time, waking or sleeping, without being sensible of it. Our being sensible of it

is not necessary to anything except our thoughts. To them it is necessary, and to them it always will be, until we can think without being conscious of it.

2.1.11 *It is not always conscious of it.*—I grant that the soul in a waking man is never without thought, because that is the condition of being awake. But a waking man may well consider whether sleeping without dreaming is not a state of the whole man, mind as well as body, since it is hard to conceive that anything should think and not be conscious of it. If the soul does think in a sleeping man without being conscious of it, I ask whether during such thinking it has any pleasure or pain, or is capable of happiness or misery. I am sure the man is not, any more than the bed or the earth he lies on. To be happy or miserable without being conscious of it seems to me utterly inconsistent and impossible. Suppose it is possible that the soul, while the body is sleeping, can have its thinking, enjoyments, and concerns, its pleasure or pain, separately, as things the man is not conscious of and has no share in. Then it is certain that Socrates asleep and Socrates awake are not the same person. His soul when he sleeps and Socrates the man, consisting of body and soul, when he is awake, are two persons. Waking Socrates has no knowledge of, or concern for, the happiness or misery that his soul enjoys alone by itself while he sleeps, without perceiving anything of it. He has no more of either than he has for the happiness or misery of a man in the Indies whom he does not know. If we wholly take away all consciousness of our actions and sensations, especially of pleasure and pain and the concern that goes with it, it will be hard to know where to place personal identity.

2.1.12 *If a sleeping man thinks without knowing it, the sleeping and the waking man are two persons.*—"The soul thinks during sound sleep," say these men. While it thinks and perceives, it is certainly capable of perceptions of delight or trouble, as well as any other perceptions, and it must necessarily be conscious of its own perceptions. But it has all this separately, and the sleeping man, it is plain, is conscious of none of it. Let us suppose, then,

that the soul of Castor, while he is sleeping, withdraws from his body. That is no impossible supposition for the men I am dealing with here, who so liberally grant life without a thinking soul to all other animals.[2] These men, then, cannot judge it impossible or a contradiction that the body should live without the soul. Nor can they judge it impossible that the soul should subsist and think, or have perception, even perception of happiness or misery, without the body. So let us, as I say, suppose the soul of Castor separated from his body during his sleep, to think apart. Let us suppose, too, that it chooses as its scene of thinking the body of another man, Pollux for example, who is sleeping without a soul. If Castor's soul can think while Castor is asleep, in a way Castor is never conscious of, it does not matter what place it chooses to think in. Here, then, we have the bodies of two men with only one soul between them, which we will suppose to sleep and wake by turns. The soul is always thinking in the waking man, and the sleeping man is never conscious of it and has not the least perception of it. I ask, then, whether Castor and Pollux, having only one soul between them in this way, are not two distinct persons, as much as Castor and Hercules were, or Socrates and Plato. That soul thinks and perceives in one of them what the other is never conscious of or concerned for. And might not one of them be very happy and the other very miserable? By just the same reasoning, those who make the soul think separately what the man is not conscious of make the soul and the man two persons. I suppose nobody will make identity of person consist in the soul's being united to the very same numerical particles of matter. If that were necessary to identity, then, in the constant flux of the particles of our bodies, it would be impossible for any man to be the same person for two days, or two moments, together.

2.1.13 *Impossible to convince those who sleep without dreaming that they think.*—So, it seems to me, every drowsy nod shakes the doctrine of those who teach that the soul is always thinking. Those, at least, who ever sleep without dreaming can never be con-

2 Castor and Pollux are the twin brothers of Greek myth.

vinced that their thoughts are sometimes busy for four hours without their knowing it. If they are caught in the very act, woken in the middle of that sleeping contemplation, they can give no account of it at all.

2.1.14 *That men dream without remembering it, urged in vain.*—It will perhaps be said "that the soul thinks even in the soundest sleep, but the memory does not retain it." The soul in a sleeping man would then be busy thinking one moment. The next moment, in a waking man, it would not remember or be able to recall a single scrap of all those thoughts. That is very hard to conceive, and it would need some better proof than bare assertion to make it believed. Who can imagine, without more ado and just on being told so, that most people, all their lives, for several hours every day, think of something they could remember nothing at all of if they were asked, even in the middle of these thoughts? Most people, I think, pass a great part of their sleep without dreaming. I once knew a man who had been educated as a scholar and had no bad memory. He told me he had never dreamed in his life until he had the fever he had then just recovered from, which was around his twenty-fifth or twenty-sixth year. I suppose the world offers more such cases. At least everyone's acquaintance will supply him with enough examples of people who pass most of their nights without dreaming.

2.1.15 *On this hypothesis the thoughts of a sleeping man ought to be most rational.*—To think often and never retain it even for a moment is a very useless sort of thinking. In such a state of thinking the soul does very little better, if at all, than a mirror, which constantly receives a variety of images, or ideas, but retains none. They disappear and vanish, and no traces of them remain. The mirror is never the better for such ideas, nor the soul for such thoughts. Perhaps it will be said "that in a waking man the materials of the body are employed and used in thinking, and that the memory of thoughts is retained by the impressions made on the brain and the traces left there after such thinking. But in the thinking of the soul that is not perceived in a sleeping man, the soul thinks apart, and, making no use of the

organs of the body, leaves no impression on it, and consequently no memory of such thoughts." I will not mention again the absurdity of two distinct persons that follows from this supposition. I answer further that whatever ideas the mind can receive and contemplate without the help of the body, it is reasonable to conclude it can also retain without the help of the body. Otherwise the soul, or any separate spirit, will gain little by thinking. Suppose it has no memory of its own thoughts. Suppose it cannot store them up for its own use and recall them when needed, and cannot reflect on what is past and make use of its former experiences, reasonings, and contemplations. Then to what purpose does it think? Those who make the soul a thinking thing on these terms will not make it a much nobler being than those they condemn make it, who hold it to be nothing but the subtlest parts of matter. Characters drawn in dust, which the first breath of wind wipes out, or impressions made on a heap of atoms or animal spirits, are every bit as useful as the thoughts of such a soul, and they make the subject just as noble. Those thoughts perish in the thinking. Once out of sight they are gone forever and leave no memory of themselves behind. Nature never makes excellent things for mean uses or for none. Our infinitely wise Creator made so admirable a faculty as the power of thinking, the faculty that comes nearest to the excellence of his own incomprehensible being. It is hardly conceivable that he should have it employed so idly and uselessly, for at least a fourth part of its time here. It would think constantly without remembering any of those thoughts, without doing any good to itself or others, and without being in any way useful to any other part of creation. If we examine it, we will not find, I suppose, the motion of dull and senseless matter anywhere in the universe put to so little use and so wholly thrown away.

2.1.16 *On this hypothesis the soul must have ideas not derived from sensation or reflection, of which there is no sign.*—It is true that we sometimes have instances of perception while we are asleep and retain the memory of those thoughts. But those who are acquainted with dreams need not be told how extravagant and

incoherent they mostly are, and how little suited to the perfection and order of a rational being. What I would gladly have settled is this. When the soul thinks apart like this, as though separate from the body, does it act less rationally than when joined with it, or not? If its separate thoughts are less rational, then these men must say that the soul owes the perfection of rational thinking to the body. If they are not, it is a wonder that our dreams should mostly be so frivolous and irrational, and that the soul should retain none of its more rational soliloquies and meditations.

2.1.17 *If I think when I do not know it, nobody else can know it.*— Some people tell us so confidently that "the soul always actually thinks." I wish they would also tell us what ideas are in the soul of a child before, or just at, its union with the body, before it has received any by sensation. The dreams of sleeping men are, as I understand it, all made up of the waking man's ideas, though mostly put together oddly. Suppose the soul has ideas of its own, not derived from sensation or reflection (as it must, if it thought before it received any impressions from the body). Then it is strange that in its private thinking (so private that the man himself does not perceive it) it should never retain any of them at the very moment it wakes out of them, and so gladden the man with new discoveries. Who can think it reasonable that the soul should, in its retirement during sleep, have so many hours' worth of thoughts, and yet never hit on any one of those ideas it did not borrow from sensation or reflection? Or that it should at least preserve the memory of none but those which, being occasioned by the body, must be less natural to a spirit? It is strange that the soul should never once in a man's whole life recall any of its pure native thoughts, the ideas it had before it borrowed anything from the body. It is strange that it should never bring into the waking man's view any ideas but those that have a tang of the cask and plainly derive their origin from that union. If it always thinks, and so had ideas before it was united with the body, or before it received any from it, we must suppose that during sleep it recalls its native ideas. During that retirement

from communication with the body, while it thinks by itself, the ideas it is busy with should be, at least sometimes, those more natural and congenial ones that it had in itself, underived from the body or from its own operations about such ideas. The waking man never remembers these. So we must conclude from this hypothesis either that the soul remembers something the man does not, or else that memory belongs only to ideas derived from the body, or to the mind's operations about them.

2.1.18 *How does anyone know that the soul always thinks? For if it is not a self-evident proposition, it needs proof.*—These men pronounce so confidently that the human soul always thinks, or, what is the same thing, that a man always thinks. I would also be glad to learn from them how they come to know it. Indeed, how do they come to know that they themselves think, when they themselves do not perceive it? This, I am afraid, is being sure without proofs and knowing without perceiving. It is, I suspect, a confused notion taken up to serve a hypothesis. It is not one of those clear truths that either their own evidence forces us to admit or common experience makes it impudent to deny. The most that can be said for it is that it is possible the soul may always think but not always retain it in memory. And I say it is just as possible that the soul may not always think. It is much more probable that it should sometimes not think than that it should often think, and for a long while at a stretch, and not be conscious to itself the very next moment that it had been thinking.

2.1.19 *That a man should be busy thinking and yet not retain it the next moment, very improbable.*—To suppose the soul thinks and the man does not perceive it is, as has been said, to make two persons in one man. If one considers these men's way of speaking carefully, one might be led to suspect that they do so. Those who tell us that the soul always thinks never, as far as I remember, say that a man always thinks. Can the soul think and not the man? Or can a man think and not be conscious of it? This, perhaps, would be suspected of being jargon in anyone else. If they say the man always thinks but is not always conscious of it, they

might as well say his body is extended without having parts. It is every bit as intelligible to say that a body is extended without parts as that anything thinks without being conscious of it, or perceiving that it does. Those who talk this way could say, with as much reason, if their hypothesis required it, that a man is always hungry but does not always feel it. But hunger consists in that very sensation, as thinking consists in being conscious that one thinks. If they say that a man is always conscious to himself of thinking, I ask how they know it. Consciousness is the perception of what passes in a man's own mind. Can another man perceive that I am conscious of anything when I do not perceive it myself? No man's knowledge here can go beyond his experience. Wake a man out of a sound sleep and ask him what he was thinking of at that moment. If he himself is conscious of nothing he was then thinking of, it would take a remarkable diviner of thoughts to assure him that he was thinking. Might such a diviner not with more reason assure him that he was not asleep? This is something beyond philosophy. It can be nothing less than revelation that discloses to another person thoughts in my mind when I can find none there myself. They must have very penetrating sight who can see for certain that I think when I cannot perceive it myself, and when I declare that I do not. Yet the same people can see that dogs or elephants do not think, when these give every demonstration of it imaginable except telling us that they do. Some may suspect this to be a step beyond the Rosicrucians. It seems easier to make oneself invisible to others than to make another's thoughts visible to me when they are not visible to himself.[3] But one need only define the soul as "a substance that always thinks," and the job is done. If such a definition has any authority, I do not know what it can serve for except to make many people suspect that they have no souls at all, since they find a good part of their lives passing away without thinking. No definitions that I know of, and no

3 The Rosicrucians were a secret brotherhood announced in German pamphlets of the early 1600s, popularly credited with occult powers such as making themselves invisible.

suppositions of any sect, are strong enough to overturn constant experience. Perhaps it is the pretense of knowing beyond what we perceive that makes so much useless dispute and noise in the world.

2.1.20 *No ideas but from sensation or reflection: evident if we observe children.*—I see no reason, therefore, to believe that the soul thinks before the senses have furnished it with ideas to think about. As those ideas increase and are retained, the soul comes, by exercise, to improve its faculty of thinking in its various parts. Afterward, by compounding those ideas and reflecting on its own operations, it increases both its stock and its facility in remembering, imagining, reasoning, and other modes of thinking.

2.1.21 Anyone who will let himself be informed by observation and experience, and not make his own hypothesis the rule of nature, will find few signs in a newborn child of a soul accustomed to much thinking, and far fewer of any reasoning at all. Yet it is hard to imagine that the rational soul should think so much and not reason at all. Consider that infants newly come into the world spend most of their time asleep. They are seldom awake except when hunger calls for the breast, or some pain (the most insistent of all sensations) or some other violent impression on the body forces the mind to perceive and attend to it. Anyone, I say, who considers this will perhaps find reason to think that a fetus in the mother's womb does not differ much from the state of a plant. It passes most of its time without perception or thought. It does very little in a place where it has no need to look for food and is surrounded with fluid that is always equally soft and of nearly the same temperature. There the eyes have no light, and the ears, shut up as they are, are not very open to sounds, and there is little or no variety or change of objects to move the senses.

2.1.22 Follow a child from its birth and observe the changes time makes. You will find that as the mind comes, through the senses, to be more and more furnished with ideas, it becomes more and more awake. It thinks more, the more it has to think

about. After a while it begins to know the objects that, being most familiar to it, have made lasting impressions. In this way it comes by degrees to know the people it deals with daily and to distinguish them from strangers. These are instances and effects of its coming to retain and distinguish the ideas the senses convey to it. And so we may observe how the mind improves in these by degrees. It advances to the exercise of those other faculties, of enlarging, compounding, and abstracting its ideas, of reasoning about them, and of reflecting on all these. I will have occasion to say more about them later.

2.1.23 If someone asks, then, when a man begins to have any ideas, I think the true answer is: when he first has any sensation. There do not appear to be any ideas in the mind before the senses have conveyed some in, so I take it that ideas in the understanding begin together with sensation. Sensation is an impression or motion, made in some part of the body, that produces some perception in the understanding. It is about these impressions made on our senses by outward objects that the mind seems first to busy itself, in the operations we call perception, remembering, consideration, reasoning, and so on.

2.1.24 *The origin of all our knowledge.*—In time the mind comes to reflect on its own operations concerning the ideas it has got by sensation. In this way it stocks itself with a new set of ideas, which I call ideas of reflection. These two are, as I have said, the origin of all knowledge. The first is the impressions made on our senses by outward objects, which are external to the mind. The second is the mind's own operations, which proceed from powers internal and proper to it, and which also become objects of its contemplation when it reflects on them. So the first capacity of the human intellect is this: the mind is fitted to receive the impressions made on it, either by outward objects through the senses, or by its own operations when it reflects on them. This is the first step a man takes toward discovering anything. It is the groundwork on which to build all the notions he will ever naturally have in this world. All those sublime thoughts that tower above the clouds and reach as high as heaven itself take

their rise and footing here. The mind wanders over a great range, and may seem to be lifted up by its remote speculations. Yet in all of it the mind does not stir one jot beyond the ideas that sense or reflection have offered for its contemplation.

2.1.25 *In receiving simple ideas, the understanding is for the most part passive.*—In this part the understanding is merely passive. Whether or not it will have these beginnings, these materials of knowledge as it were, is not in its own power. For many of the objects of our senses force their particular ideas on our minds whether we want them or not. And the operations of our minds will not let us be without at least some obscure notions of them. No man can be wholly ignorant of what he does when he thinks. When these simple ideas are offered to the mind, the understanding cannot refuse to have them. Once they are imprinted, it cannot alter them, or blot them out and make new ones itself. It can no more do so than a mirror can refuse, alter, or erase the images or ideas produced in it by the objects set before it. As the bodies around us affect our organs in various ways, the mind is forced to receive the impressions. It cannot avoid perceiving the ideas that are attached to them.

SIMPLE IDEAS

Simple ideas enter the mind unmixed, and the mind can neither invent nor destroy them.

2.2.1 *Uncompounded appearances.*—To understand better the nature, manner, and extent of our knowledge, one thing must be carefully noted about the ideas we have: some of them are simple, and some complex.

In the things themselves, the qualities that affect our senses are so united and blended that there is no separation, no distance between them. Yet it is plain that the ideas they produce in the mind enter by the senses simple and unmixed. Sight and touch often take in different ideas from the same object at the same time: a man sees motion and color at once, and the hand feels softness and warmth in the same piece of wax. Yet the

simple ideas united in the same subject are as perfectly distinct as those that come in by different senses. The coldness and hardness a man feels in a piece of ice are as distinct ideas in the mind as the smell and whiteness of a lily, or as the taste of sugar and the smell of a rose. And nothing can be plainer to a man than the clear and distinct perceptions he has of those simple ideas. Each of them is uncompounded in itself. It contains nothing but one uniform appearance or conception in the mind, and cannot be divided into different ideas.

2.2.2 *The mind can neither make nor destroy them.*—These simple ideas, the materials of all our knowledge, are suggested and supplied to the mind only by the two ways mentioned above, namely sensation and reflection. Once the understanding is stocked with these simple

ideas, it has the power to repeat, compare, and unite them, even into an almost infinite variety, and so it can make new complex ideas at will. But not even the loftiest wit or the most enlarged understanding can invent or frame one new simple idea in the mind that was not taken in by the ways just mentioned. No quickness or variety of thought will do it. Nor can any force of the understanding destroy the simple ideas that are there. Man's dominion in this little world of his own understanding is much the same as it is in the great world of visible things. There, however much art and skill he uses, his power reaches no further than compounding and dividing the materials put into his hands. He can do nothing toward making the least particle of new matter, or destroying one atom of what already exists. Anyone who tries to fashion a new simple idea in his understanding will find the same inability in himself. He can have no simple idea that he has not received through his senses from external objects, or by reflection from the operations of his own mind on them. I would have anyone try to imagine a taste that has never affected his palate, or frame the idea of a scent he has never smelled. When he can do this, I will also conclude that a blind man has ideas of colors, and a deaf man true, distinct notions of sounds.

2.2.3 We cannot believe it impossible for God to make a creature with other organs than the five senses he has given to man (as they are usually counted), and with more ways of conveying notice of bodily things into the understanding. For the reason just given, though, I think no one can possibly imagine any other qualities in bodies, however they are constituted, by which they could be noticed, besides sounds, tastes, smells, and visible and tangible qualities. Had mankind been made with only four senses, the qualities that are the object of the fifth sense would have been as far from our notice, imagination, and conception as any qualities belonging to a sixth, seventh, or eighth sense can possibly be now. And it would be great presumption to deny that some other creatures, in some other parts of this vast and stupendous universe, may have such senses. A man should not proudly set himself at the top of all things. Let him instead consider the immensity of this structure, and the great variety found in the small and insignificant part of it that he has to do with. He may then be inclined to think that its other dwellings may hold other and different intelligent beings. He may know or grasp their faculties as little as a worm shut up in one drawer of a cabinet knows of the senses or understanding of a man. Such variety and excellence befit the wisdom and power of the Maker. I have followed here the common opinion that man has only five senses, though perhaps more could justly be counted. Either supposition serves my present purpose equally well.

IDEAS OF ONE SENSE

Locke sorts simple ideas by how they enter the mind, beginning with those from one sense only.

2.3.1 *Division of simple ideas.*—To grasp better the ideas we receive from sensation, it may be useful to consider them in relation to the different ways in which they approach our minds and make themselves perceivable to us.

First, then, there are some that come into our minds by one sense only.

Second, there are others that make their way into the mind by more senses than one.

Third, others that are had from reflection only.

Fourth, there are some that make their way into the mind, and are suggested to it, by all the ways of sensation and reflection.

We will consider them separately under these several headings.

First, there are some ideas that are admitted only through one sense, which is specially adapted to receive them. Light and colors come in only by the eyes. These include white, red, yellow, and blue, with their various degrees or shades, and mixtures such as green, scarlet, purple, sea-green, and the rest. All kinds of noises, sounds, and tones come in only by the ears, and the various tastes and smells by the nose and palate. The nerves are the conduits that carry these ideas from outside to their audience in the brain, the mind's audience chamber, as I may call it. Suppose any of these organs, or their nerves, are so disordered that they do not perform their functions. Then the ideas have no back door to be let in by, and no other way to bring themselves into view and be perceived by the understanding.

The most considerable of the ideas belonging to touch are heat and cold, and solidity. All the rest are obvious enough. They consist almost wholly either in the sensible configuration, as smooth and rough, or in the more or less firm adhesion of the parts, as hard and soft, tough and brittle.

2.3.2 *Few simple ideas have names.*—I think it unnecessary to list all the particular simple ideas belonging to each sense. Nor would it be possible if we wanted to, since most of the senses have many more of them than we have names for. There are almost as many varieties of smell as there are species of bodies in the world, if not more, and most of them lack names. "Sweet" and "stinking" commonly serve our turn for these ideas. In effect this is little more than calling them pleasing or displeas-

ing, though the smell of a rose and that of a violet, both sweet, are certainly very distinct ideas. Nor are the different tastes, whose ideas we receive by our palates, much better supplied with names. Sweet, bitter, sour, harsh, and salty are almost all the terms we have for naming the numberless variety of distinct flavors. These are found not only in almost every sort of creature, but in the different parts of the same plant, fruit, or animal. The same may be said of colors and sounds. So in the account of simple ideas I am giving here, I will content myself with setting down only two kinds: those most important for our present purpose, and those less apt in themselves to be noticed, though they are very often ingredients of our complex ideas. Among the latter I think I may well count solidity, which I will therefore treat in the next chapter.

SOLIDITY

The idea of solidity comes from touch and is distinct from both pure space and hardness.

2.4.1 *We receive this idea from touch.*—We receive the idea of solidity by touch. It arises from the resistance we find in a body to the entry of any other body into the place it occupies, until it has left it. There is no idea we receive more constantly from sensation than solidity. Whether we move or rest, and in whatever posture, we always feel something under us that supports us and stops us from sinking further down. And the bodies we handle every day make us perceive something about them. While they remain between the parts of our hands that press them, they keep those parts from coming together by an insurmountable force. When two bodies are moved toward each other, what thus prevents them from coming together I call solidity. I will not argue about whether this sense of the word "solid" is nearer its original meaning than the sense mathematicians use it in. It is enough that I think the common notion of solidity will allow this use of it, if not justify it. But if anyone thinks it better to call it impenetrability, he has my consent. Only I have thought the

term "solidity" more suitable for expressing this idea. One reason is that it is commonly used in that sense. Another is that it carries something more positive in it than "impenetrability," which is negative, and is perhaps more a consequence of solidity than solidity itself. Of all ideas, this seems the one most intimately connected with, and essential to, body. It is found or imagined nowhere else but in matter. Our senses notice it only in masses of matter large enough to cause a sensation in us. Yet once the mind has got this idea from such grosser sensible bodies, it traces it further. It considers solidity, as well as figure, in the smallest particle of matter that can exist, and finds it inseparably inherent in body, wherever it is and however it is modified.

2.4.2 *Solidity fills space.*—This is the idea that belongs to body, by which we conceive it to fill space. The idea of this filling of space is as follows. Where we imagine any space taken up by a solid substance, we conceive it to occupy that space so that it excludes all other solid substances. It will forever prevent any two other bodies moving toward each other in a straight line from touching, unless it moves out from between them in a line not parallel to the one they move in. The bodies we ordinarily handle sufficiently supply us with this idea of it.

2.4.3 *Distinct from space.*—By this resistance a body keeps other bodies out of the space it occupies, and the resistance is so great that no force, however great, can overcome it. Soft as a drop of water is, all the bodies in the world pressing it on all sides will never overcome its resistance to their coming together, until it is moved out of their way. This distinguishes our idea of solidity both from pure space, which is capable of neither resistance nor motion, and from the ordinary idea of hardness. For a man can conceive two bodies at a distance, able to approach each other until their surfaces meet, without touching or displacing any solid thing. By this, I think, we have the clear idea of space without solidity. For (not to go so far as the annihilation of any particular body) I ask whether a man cannot have the idea of one single body moving alone, without any other immediately

taking its place. I think it evident that he can. The idea of motion in one body no more includes the idea of motion in another than the idea of a square figure in one body includes the idea of a square figure in another. I am not asking whether bodies actually exist in such a way that one body cannot really move without another moving too. To decide this either way is to beg the question for or against a vacuum. My question is whether one cannot have the idea of one body moved while others are at rest. And I think no one will deny this. If so, then the place it left gives us the idea of pure space without solidity. Any other body may enter that space without meeting resistance or pushing anything. When the piston in a pump is drawn, the space it filled in the tube is certainly the same whether any other body follows the piston's motion or not. Nor is it a contradiction that, when one body moves, another that is merely in contact with it should not follow it. The necessity of such a motion rests only on the supposition that the world is full. It does not rest on the distinct ideas of space and solidity, which are as different as resistance and non-resistance, pushing and not pushing. And men's very disputes about a vacuum plainly demonstrate that they have ideas of space without body, as is shown elsewhere.

2.4.4 *From hardness.*—Solidity is also distinguished from hardness. Solidity consists in fullness, and so in the complete exclusion of other bodies from the space it occupies. Hardness consists in a firm cohesion of the parts of matter that make up masses of a sensible size, so that the whole does not easily change its shape. In fact hard and soft are names we give to things only in relation to the constitution of our own bodies. We generally call a thing hard if, when any part of our bodies presses it, it will cause us pain sooner than change its shape. And we call it soft if it changes the position of its parts at an easy and painless touch.

But this difficulty of changing the position of the sensible parts among themselves, or the shape of the whole, gives no more solidity to the hardest body in the world than to the softest. Nor is a diamond one jot more solid than water. The two flat

sides of two pieces of marble will come together more easily with nothing but water or air between them than with a diamond between them. But this is not because the parts of the diamond are more solid than those of water, or resist more. It is because the parts of water are more easily separated from one another. A sideways motion moves them aside more easily, and so they give way to the approach of the two pieces of marble. But suppose they could be prevented from making room by that sideways motion. Then they would forever keep the two pieces of marble apart as much as the diamond does, and no force could overcome their resistance, any more than the resistance of the parts of a diamond. The softest body in the world, if it is not put out of the way but remains between two other bodies, will resist their coming together as invincibly as the hardest body that can be found or imagined. Anyone who fills a yielding soft body well with air or water will quickly find its resistance. And anyone who thinks that only hard bodies can keep his hands from coming together is welcome to try it with the air enclosed in a football. I have been told that the experiment was made at Florence with a hollow globe of gold, filled with water and exactly sealed. It further shows the solidity of so soft a body as water.[4] The golden globe, filled in this way, was put into a press driven by the extreme force of screws. The water forced its way through the pores of that very dense metal. Finding no room inside for its particles to come closer together, it got to the outside, where it rose like dew and then fell in drops. All this happened before the sides of the globe could be made to give way under the violent compression of the machine that squeezed it.

2.4.5 *On solidity depend impulse, resistance, and protrusion.*—This idea of solidity distinguishes the extension of body from the extension of space. The extension of body is nothing but the cohesion or continuity of solid, separable, movable parts. The

4 The experiment was performed by the Accademia del Cimento in Florence and reported in its *Saggi di naturali esperienze* (1667); it was usually cited to show that water cannot be compressed.

extension of space is the continuity of unsolid, inseparable, and immovable parts. The mutual impulse, resistance, and protrusion of bodies also depend on their solidity. There are several people, then (and I confess myself one of them), who are convinced that they have clear and distinct ideas of pure space and of solidity. They are convinced they can think of space without anything in it that resists or is pushed by body. This is the idea of pure space. They think they have it as clearly as any idea they can have of the extension of body. The distance between the opposite parts of a concave surface is just as clear to them without the idea of any solid parts between them as with it. On the other hand, they are also convinced that they have a second idea, distinct from that of pure space. This is the idea of something that fills space, that can be pushed by the impulse of other bodies, or resist their motion. There may be others who do not have these two ideas distinct, but confuse them and make one of them. In that case I do not see how men who have the same idea under different names, or different ideas under the same name, can talk with one another. They could do so no more than a man who is neither blind nor deaf, and has distinct ideas of the color scarlet and the sound of a trumpet, could discuss the color scarlet with the blind man I mentioned elsewhere, who imagined that the idea of scarlet was like the sound of a trumpet.[5]

2.4.6 *What it is.*—If anyone asks me what this solidity is, I send him to his senses to inform him. Let him put a flint or a football between his hands and then try to press them together, and he will know. He may think this is not a sufficient explanation of what solidity is and what it consists in. Then I promise to tell him when he tells me what thinking is, or what it consists in. Or let him explain to me what extension or motion is, which perhaps seems much easier. Our simple ideas are such as experience teaches them to us. If we try to go beyond that and make them clearer in the mind by words, we will have no more success than we would talking to a blind man to clear up the dark-

5 The blind man who thought scarlet was like the sound of a trumpet appears at 3.4.11.

ness of his mind. We cannot talk the ideas of light and colors into him. I will show the reason for this elsewhere.

IDEAS OF MORE THAN ONE SENSE

Space, figure, rest and motion reach the mind through both sight and touch.

2.5.1 The ideas we get by more than one sense are those of space, or extension, figure, rest, and motion. These make perceivable impressions on both the eyes and the touch. We can receive the ideas of the extension, figure, motion, and rest of bodies, and convey them into our minds, both by seeing and by feeling. But I will have occasion to speak of these more fully elsewhere, so here I only list them.

SIMPLE IDEAS OF REFLECTION

Perception and willing, the powers called understanding and will, come from reflection.

2.6.1 *Simple ideas are the mind's operations on its other ideas.*—The mind receives from outside the ideas mentioned in the preceding chapters. Then it turns its view inward upon itself and observes its own actions concerning the ideas it has. From these it takes other ideas, which are as capable of being objects of its contemplation as any of those it received from things outside it.

2.6.2 *We have the idea of perception and the idea of willing from reflection.*—The mind has two great and principal actions. They are the ones most often considered, and they are so frequent that anyone who likes may notice them in himself. They are perception, or thinking, and volition, or willing. The power of thinking is called the understanding, and the power of volition is called the will. These two powers or abilities in the mind are called faculties. Later I will have occasion to speak of some of the modes of these simple ideas of reflection, such as remembering, discerning, reasoning, judging, knowledge, faith, and so on.

IDEAS OF BOTH SENSATION AND REFLECTION

Pleasure and pain, existence, unity, power and succession come by every way into the mind.

2.7.1 *Pleasure and pain.*—There are other simple ideas that make their way into the mind by all the ways of sensation and reflection. These are pleasure or delight, and its opposite, pain or uneasiness; power; existence; unity.

2.7.2 —Delight or uneasiness, one or the other, attaches itself to almost all our ideas, both of sensation and of reflection. Hardly any affection of our senses from outside, or any private thought of our mind within, is unable to produce pleasure or pain in us. By pleasure and pain I mean whatever delights or troubles us most, whether it arises from the thoughts of our minds or from anything acting on our bodies. On the one side we may call it satisfaction, delight, pleasure, happiness, and so on. On the other we may call it uneasiness, trouble, pain, torment, anguish, misery, and so on. Either way, these are still only different degrees of the same thing. They belong to the ideas of pleasure and pain, delight or uneasiness, which are the names I will most commonly use for those two sorts of ideas.

2.7.3 The infinitely wise Author of our being has given us power over several parts of our bodies, to move them or keep them at rest as we see fit. By moving them, we can also move ourselves and other bodies in contact with us, and all the actions of our body consist in this. He has also given our minds a power, in several instances, to choose which of its ideas it will think about, and to pursue the inquiry into this or that subject with consideration and attention. To stir us to these actions of thinking and motion that we are capable of, he has been pleased to join a perception of delight to several thoughts and several sensations. If this delight were wholly separated from all our outward sensations and inward thoughts, we would have no reason to prefer one thought or action to another, negligence to attention, or motion to rest. So we would neither stir our bodies nor

use our minds. We would let our thoughts (if I may call them that) drift, without any direction or design. We would let the ideas of our minds make their appearances there as it happened, like unregarded shadows, without attending to them. In that state man, however well supplied with the faculties of understanding and will, would be a very idle, inactive creature. He would pass his time only in a lazy, lethargic dream. Our wise Creator has therefore been pleased to attach an accompanying pleasure to several objects and the ideas we receive from them, and also to several of our thoughts. He has attached it to different objects in different degrees. He did so that the faculties he had endowed us with might not remain wholly idle and unused by us.

2.7.4 Pain has the same power and use in setting us to work as pleasure has, since we are as ready to use our faculties to avoid pain as to pursue pleasure. Only this is worth considering: pain is often produced by the same objects and ideas that produce pleasure in us. Because the two are so closely joined, we often feel pain in sensations where we expected pleasure. This gives us new occasion to admire the wisdom and goodness of our Maker. He intended the preservation of our being, and so attached pain to the application of many things to our bodies. The pain warns us of the harm they will do, and advises us to withdraw from them. But he intended not merely our preservation. He intended the preservation of every part and organ in its perfection, and so in many cases he attached pain to the very ideas that delight us. Heat is very agreeable to us in one degree, but with a little further increase it becomes no ordinary torment. Light itself is the most pleasant of all sensible objects. Yet if there is too much of it, increased beyond a due proportion to our eyes, it causes a very painful sensation. Nature has wisely and kindly arranged this. The instruments of sensation are necessarily very fine and delicate in their structure, and an object may disorder them by the violence of its action. Then the pain warns us to withdraw before the organ is put quite out of order and made unfit for its proper function in the future. Con-

sidering the objects that produce pain may well persuade us that this is its end or use. For though great light is unbearable to our eyes, the deepest darkness does not harm them at all. Darkness causes no disorderly motion in the eye, and so leaves that intricate organ unharmed in its natural state. Yet excess of cold, as well as of heat, pains us. Both are equally destructive of the temperature necessary to preserve life and to exercise the various functions of the body. That temperature consists in a moderate degree of warmth or, if you like, in a motion of the insensible parts of our bodies confined within certain bounds.

2.7.5 Beyond all this, we may find another reason why God has scattered various degrees of pleasure and pain throughout all the things that surround and affect us. He has blended them together in almost everything our thoughts and senses have to do with. In all the enjoyments that created things can offer us, we find imperfection, dissatisfaction, and a lack of complete happiness. So we might be led to seek happiness in the enjoyment of Him "with whom there is fullness of joy, and at whose right hand are pleasures for evermore."[6]

2.7.6 *Pleasure and pain.*—What I have said here may perhaps not make the ideas of pleasure and pain clearer to us than our own experience does, and experience is the only way we are capable of having them. Yet it serves the main aim of these inquiries to consider why they are attached to so many other ideas. Doing so gives us proper sentiments of the wisdom and goodness of the Sovereign Disposer of all things. For the knowledge and veneration of him are the chief end of all our thoughts, and the proper business of all understandings.

2.7.7 *Existence and unity.*—Existence and unity are two other ideas that are suggested to the understanding by every object outside and every idea within. When ideas are in our minds, we consider them as actually being there, just as we consider things to be actually outside us. That is, we consider that they exist, or have existence. And whatever we can consider as one thing,

6 Psalm 16:11.

whether a real being or an idea, suggests to the understanding the idea of unity.

2.7.8 *Power.*—Power, too, is one of those simple ideas we receive from sensation and reflection. We observe in ourselves that we can move at will several parts of our bodies that were at rest. And the effects that natural bodies are able to produce in one another present themselves to our senses every moment. By both these ways we get the idea of power.

2.7.9 *Succession.*—Besides these there is another idea, the idea of succession. Our senses suggest it, but it is offered to us more constantly by what passes in our minds. If we look directly into ourselves and reflect on what is observable there, we will find our ideas always passing in a train, one going and another coming, without a break, whenever we are awake or have any thought.

2.7.10 *Simple ideas the materials of all our knowledge.*—These are, I think, the most considerable of the simple ideas the mind has, if they are not all of them. All its other knowledge is made out of them. And the mind receives them all only by the two ways already mentioned, sensation and reflection.

Someone may think these bounds too narrow for the capacious mind of man to range in. The mind flies further than the stars and cannot be confined by the limits of the world. It often extends its thoughts even beyond the utmost expanse of matter, and makes incursions into that incomprehensible void. I grant all this. But I ask anyone to point to a single simple idea that is not received from one of those inlets mentioned before, or any complex idea not made out of those simple ones. Perhaps it seems strange that these few simple ideas should be enough to occupy the quickest thought or the largest capacity. They supply the materials of all the varied knowledge of mankind, and of its still more varied fancies and opinions. It will seem less strange if we consider how many words can be made out of the various combinations of twenty-four letters. Or we may go one step further and reflect on the variety of combinations that can be made with just one of the ideas mentioned above, namely number,

whose stock is inexhaustible and truly infinite. And what a large and immense field extension alone offers the mathematicians![7]

POSITIVE IDEAS FROM PRIVATIVE CAUSES

Ideas such as black and cold are positive in the mind, whatever their causes in things.

2.8.1 *Positive ideas from privative causes.*—Concerning the simple ideas of sensation, one point must be considered. Whatever is so constituted in nature as to be able to cause any perception in the mind by affecting our senses thereby produces a simple idea in the understanding. Whatever the external cause of that idea may be, our discerning faculty comes to notice it. The mind then looks on it and considers it a real positive idea in the understanding, as much as any other, though perhaps its cause is only a privation in the subject.

2.8.2 Thus the ideas of heat and cold, light and darkness, white and black, motion and rest, are equally clear and positive ideas in the mind. This is so even though some of their causes may be mere privations in the subjects from which our senses derive those ideas. In viewing them, the understanding considers all of them as distinct positive ideas, without noticing the causes that produce them. That inquiry does not belong to the idea as it is in the understanding. It belongs to the nature of the things existing outside us. These are two very different things and must be carefully distinguished. It is one thing to perceive and know the idea of white or black. It is quite another to examine what kind of particles there must be, and how they must be arranged on the surface, to make an object appear white or black.

2.8.3 A painter or dyer may never have inquired into their causes, yet he has the ideas of white and black and other colors in his understanding clearly, perfectly, and distinctly. He has them as distinctly as the philosopher, and perhaps more so. The philosopher has busied himself in considering their natures,

7 Twenty-four letters: the alphabet as then commonly counted, with i/j and u/v each treated as one letter.

and thinks he knows how far each of them is positive or privative in its cause. And the idea of black is no less positive in the painter's mind than that of white, however much the cause of that color in the external object may be only a privation.

2.8.4 If the aim of my present undertaking were to inquire into the natural causes and manner of perception, I would offer this reason why a privative cause might, at least in some cases, produce a positive idea. All sensation is produced in us only by different degrees and modes of motion in our animal spirits, which external objects agitate in various ways. So the lessening of any former motion must produce a new sensation just as necessarily as the variation or increase of that motion does. It must introduce a new idea, which depends only on a different motion of the animal spirits in that organ.[8]

2.8.5 But I will not decide here whether this is so or not. Instead I appeal to everyone's own experience. The shadow of a man consists of nothing but the absence of light, and the greater the absence of light, the more visible the shadow. When someone looks at it, does it not cause as clear and positive an idea in his mind as the man himself does, even covered in bright sunshine? And the picture of a shadow is a positive thing. We do, indeed, have negative names, which stand not directly for positive ideas but for their absence, such as "insipid," "silence," "nihil," and so on. These words denote positive ideas, for example taste, sound, being, with a signification of their absence.[9]

2.8.6 *Positive ideas from privative causes.*—And so one may truly be said to see darkness. For suppose there is a perfectly dark hole, from which no light is reflected. It is certain that one may see its shape, or it may be painted. Whether the ink I write with produces any other idea is a question. The privative causes I have assigned here for positive ideas follow the common opinion. But in truth it will be hard to determine whether there

8 "Animal spirits": in the physiology of the period, a fine fluid thought to flow through the nerves and carry sensation and motion.
9 *Nihil*: Latin for "nothing."

really are any ideas from a privative cause, until it has been determined whether rest is any more a privation than motion is.

PRIMARY AND SECONDARY QUALITIES

Locke separates qualities our ideas resemble, like figure and motion, from powers like color and taste.

2.8.7 *Ideas in the mind, qualities in bodies.*—To uncover the nature of our ideas better, and to discuss them intelligibly, it will be convenient to distinguish them in two ways: as they are ideas or perceptions in our minds, and as they are modifications of matter in the bodies that cause such perceptions in us. That way we will not think (as is perhaps usually done) that they are exact images and resemblances of something inherent in the subject. Most ideas of sensation are no more the likeness of something existing outside us than the names that stand for them are the likeness of our ideas, though names, when we hear them, tend to call those ideas up in us.

2.8.8 Whatever the mind perceives in itself, or whatever is the immediate object of perception, thought, or understanding, I call an idea. The power to produce any idea in our mind I call a quality of the subject in which that power is. Thus a snowball has the power to produce in us the ideas of white, cold, and round. The powers to produce those ideas in us, as they are in the snowball, I call qualities; and as they are sensations or perceptions in our understandings, I call them ideas. If I sometimes speak of these ideas as being in the things themselves, I should be understood to mean those qualities in the objects which produce them in us.

2.8.9 *Primary qualities.*—Considered in this way, the qualities in bodies are, first, those that are utterly inseparable from the body, whatever state it is in. The body constantly keeps them through all the alterations and changes it undergoes, whatever force is used on it. Sense constantly finds them in every particle of matter that is big enough to be perceived. The mind finds them inseparable from every particle of matter, even one too

small to be perceived singly by our senses. Take a grain of wheat, for example, and divide it into two parts: each part still has solidity, extension, figure, and mobility. Divide it again, and it still keeps the same qualities. Keep dividing it until the parts become insensible, and each of them must still keep all those qualities. For division (which is all that a mill, or a pestle, or any other body does to another in reducing it to insensible parts) can never take away solidity, extension, figure, or mobility from any body. It only makes two or more distinct, separate masses of matter out of what was only one before. All these distinct masses, counted as so many distinct bodies after division, make a certain number. These I call the original or primary qualities of body. I think we can observe that they produce simple ideas in us, namely, solidity, extension, figure, motion or rest, and number.

2.8.10 *Secondary qualities.*—Second, there are qualities that in truth are nothing in the objects themselves but powers to produce various sensations in us by means of their primary qualities, that is, by the bulk, figure, texture, and motion of their insensible parts. Colors, sounds, tastes, and so on are of this kind. These I call secondary qualities. A third sort might be added to these, which everyone allows to be mere powers. Yet they are as much real qualities in the subject as those which I call qualities, to go along with the common way of speaking, and, to distinguish them, secondary qualities. For the power in fire to produce a new color or consistency in wax or clay by its primary qualities is as much a quality in fire as the power it has to produce in me a new idea or sensation of warmth or burning, which I did not feel before. It does this by the same primary qualities, namely, the bulk, texture, and motion of its insensible parts.

2.8.11 *How primary qualities produce their ideas.*—The next thing to consider is how bodies produce ideas in us. That is plainly by impulse, the only way in which we can conceive bodies to operate.

2.8.12 External objects are not united to our minds when they produce ideas there, and yet we perceive these original qualities in those of them that fall singly under our senses. It is evident, then, that some motion must be carried on from them by our nerves or animal spirits, through some parts of our bodies, to the brain or the seat of sensation, there to produce in our minds the particular ideas we have of them. And since the extension, figure, number, and motion of bodies of an observable size may be perceived at a distance by sight, it is evident that some bodies, each imperceptible by itself, must come from them to the eyes. These convey to the brain some motion, which produces in us the ideas we have of them.

2.8.13 *How secondary.*—We may conceive that the ideas of secondary qualities are produced in us in the same way as the ideas of these original qualities are, namely, by the operation of insensible particles on our senses. For it is plain that there are bodies each of which is so small that we cannot discover its bulk, figure, or motion by any of our senses. This is evident in the particles of air and water. There are others far smaller still, perhaps as much smaller than the particles of air and water as those particles are smaller than peas or hailstones. Let us suppose for now that the different motions and figures, bulk and number, of such particles affect the various organs of our senses, and produce in us the different sensations we have from the colors and smells of bodies. Suppose, for example, that a violet causes the ideas of the blue color and sweet scent of that flower to be produced in our minds by the impulse of such insensible particles of matter, of particular figures and sizes, and with different degrees and modifications of motion. It is no more impossible to conceive that God should attach such ideas to motions they do not resemble than that he should attach the idea of pain to the motion of a piece of steel cutting our flesh, which that idea does not resemble at all.

2.8.14 What I have said about colors and smells may be understood of tastes and sounds too, and of other similar sensible qualities. Whatever reality we mistakenly attribute to them,

they are in truth nothing in the objects themselves but powers to produce various sensations in us. As I have said, they depend on those primary qualities, namely, the bulk, figure, texture, and motion of parts.

2.8.15 *Ideas of primary qualities are resemblances; of secondary, not.* —From this, I think, it is easy to draw an observation. The ideas of the primary qualities of bodies are resemblances of them, and their patterns really do exist in the bodies themselves. But the ideas produced in us by these secondary qualities have no resemblance to them at all. There is nothing like our ideas existing in the bodies themselves. In the bodies we name after them, they are only a power to produce those sensations in us. What is sweet, blue, or warm in idea is nothing but a certain bulk, figure, and motion of the insensible parts in the bodies themselves, which we call by those names.

2.8.16 Flame is called hot and light, snow white and cold, and manna white and sweet, from the ideas they produce in us. These qualities are commonly thought to be the same in those bodies as those ideas are in us, the one a perfect resemblance of the other, as in a mirror. Most people would judge it very extravagant if anyone said otherwise.[10] And yet the same fire that produces in us the sensation of warmth at one distance produces the very different sensation of pain when we come closer. Anyone who considers this ought to ask himself what reason he has to say that his idea of warmth, produced in him by the fire, is actually in the fire, while his idea of pain, which the same fire produced in him in the same way, is not. Why are whiteness and coldness in snow, and pain not, when snow produces both the one idea and the other in us, and can do neither except by the bulk, figure, number, and motion of its solid parts?

2.8.17 The particular bulk, number, figure, and motion of the parts of fire or snow are really in them, whether or not anyone's senses perceive them. They can therefore be called real qualities, because they really exist in those bodies. But light, heat,

10 Manna here is the apothecary's manna, the dried sweet sap of the manna ash, used in Locke's day as a mild laxative.

whiteness, or coldness are no more really in them than sickness or pain is in manna. Take away the sensation of them. Let the eyes not see light or colors, nor the ears hear sounds; let the palate not taste, nor the nose smell. Then all colors, tastes, odors, and sounds, as they are such particular ideas, vanish and cease, and are reduced to their causes, that is, the bulk, figure, and motion of parts.

2.8.18 A piece of manna of a perceptible size is able to produce in us the idea of a round or square figure. By being moved from one place to another, it produces the idea of motion. This idea of motion represents it as it really is in the moving manna. A circle or a square is the same whether in idea or in existence, in the mind or in the manna. So both motion and figure are really in the manna, whether we notice them or not, and everybody readily agrees to this. Besides this, manna has a power, by the bulk, figure, texture, and motion of its parts, to produce in us the sensations of sickness, and sometimes of sharp pains or gripes. Everyone also readily agrees that these ideas of sickness and pain are not in the manna. They are effects of its operation on us, and they are nowhere when we do not feel them. And yet people can hardly be brought to think that sweetness and whiteness are not really in manna. These are only the effects of the manna's operation on the eyes and palate, by the motion, size, and figure of its particles, just as the pain and sickness caused by manna are admittedly nothing but the effects of its operation on the stomach and bowels, by the size, motion, and figure of its insensible parts (for a body can operate by nothing else, as has been proved). It is as if manna could not operate on the eyes and palate, and so produce in the mind particular distinct ideas which it does not itself have, just as we allow that it can operate on the bowels and stomach, and so produce distinct ideas which it does not itself have. These ideas are all effects of the manna's operation on various parts of our bodies, by the size, figure, number, and motion of its parts. Some reason would be needed to explain two things. Why should the ideas produced by way of the eyes and palate be thought to be really in the manna, rather

than those produced by way of the stomach and bowels? And why should the pain and sickness, ideas that are effects of manna, be thought to be nowhere when they are not felt, while the sweetness and whiteness are thought to exist in the manna when they are not seen or tasted? After all, these are effects of the same manna on other parts of the body, in ways that are just as unknown.

2.8.19 *Ideas of primary qualities are resemblances; of secondary, not.* —Consider the red and white color in porphyry. Prevent light from striking it, and its colors vanish; it no longer produces any such ideas in us. When the light returns, it produces these appearances in us again. Can anyone think that the presence or absence of light makes any real alteration in the porphyry? Can anyone think that those ideas of whiteness and redness are really in the porphyry in the light, when it plainly has no color in the dark? It does indeed have, both night and day, a certain configuration of particles. When rays of light bounce off some parts of that hard stone, this configuration tends to produce in us the idea of redness, and from other parts the idea of whiteness. But whiteness or redness is not in it at any time. There is only a texture that has the power to produce such a sensation in us.

2.8.20 Pound an almond, and its clear white color will be changed into a dirty one, and its sweet taste into an oily one. What real alteration can the beating of the pestle make in any body except an alteration of its texture?

2.8.21 Once ideas are distinguished and understood in this way, we may be able to explain how the same water, at the same time, may produce the idea of cold by one hand and of heat by the other. If those ideas were really in the water, it would be impossible for the same water to be both hot and cold at the same time. But suppose we imagine warmth, as it is in our hands, to be nothing but a certain sort and degree of motion in the tiny particles of our nerves or animal spirits. Then we can understand how the same water can produce, at the same time, the sensation of heat in one hand and of cold in the other. Figure

never does this. It never produces the idea of a square by one hand when it has produced the idea of a globe by the other. But if the sensation of heat and cold is nothing but the increase or decrease of the motion of the tiny parts of our bodies, caused by the corpuscles of some other body, the following is easy to understand. Suppose that motion is greater in one hand than in the other. Suppose a body is applied to both hands that has a greater motion in its tiny particles than those of one hand have, and a lesser motion than those of the other. It will increase the motion in the one hand and reduce it in the other, and so cause the different sensations of heat and cold that depend on it.

2.8.22 In what has just gone before, I have gone a little further into physical inquiries than I perhaps intended. But it was necessary to make the nature of sensation somewhat understood. It was also necessary to make the difference between the qualities in bodies and the ideas they produce in the mind distinctly conceived, since without this it would be impossible to talk intelligibly about them. So I hope I will be pardoned this little excursion into natural philosophy. For in our present inquiry it is necessary to distinguish the primary and real qualities of bodies, which are always in them (namely, solidity, extension, figure, number, and motion or rest, and which are sometimes perceived by us, namely, when the bodies they are in are big enough to be discerned singly), from those secondary and imputed qualities. These are only the powers of various combinations of those primary ones, when they operate without being distinctly discerned. By this we may also come to know which ideas are, and which are not, resemblances of something really existing in the bodies we name after them.

2.8.23 *Three sorts of qualities in bodies.*—The qualities that are in bodies, then, rightly considered, are of three sorts.

First, the bulk, figure, number, situation, and motion or rest of their solid parts. These are in them whether we perceive them or not. When they are big enough for us to discover them, they give us an idea of the thing as it is in itself, as is plain in artificial things. These I call primary qualities.

Second, the power that is in any body, by reason of its insensible primary qualities, to operate in a particular way on any of our senses, and so produce in us the different ideas of various colors, sounds, smells, tastes, and so on. These are usually called sensible qualities.

Third, the power that is in any body, by reason of the particular constitution of its primary qualities, to change the bulk, figure, texture, and motion of another body so that it operates on our senses differently from the way it did before. Thus the sun has a power to make wax white, and fire to make lead fluid. These are usually called powers.

The first of these, as has been said, I think may properly be called real, original, or primary qualities, because they are in the things themselves whether they are perceived or not. It is on their different modifications that the secondary qualities depend.

The other two are only powers to act differently on other things. These powers result from the different modifications of those primary qualities.

2.8.24 *The first are resemblances. The second thought resemblances, but are not. The third neither are, nor are thought so.*—The two latter sorts of qualities are mere powers and nothing but powers. They relate to various other bodies and result from the different modifications of the original qualities. Yet they are generally thought of otherwise. The second sort, namely, the powers to produce various ideas in us through our senses, are regarded as real qualities in the things that affect us in this way. The third sort are called and considered mere powers. For example, the ideas of heat or light, which we receive from the sun by our eyes or touch, are commonly thought to be real qualities existing in the sun, and something more than mere powers in it. But when we consider the sun in relation to wax, which it melts or bleaches, we regard the whiteness and softness produced in the wax as effects produced by powers in the sun, not as qualities in it. Yet, rightly considered, these qualities of light and warmth are perceptions in me when I am warmed or lit by the sun. They

are in the sun in no other way than the changes made in the wax, when it is bleached or melted, are in the sun. They are all equally powers in the sun, depending on its primary qualities. In the one case, these enable it to alter the bulk, figure, texture, or motion of some of the insensible parts of my eyes or hands, and so to produce in me the idea of light or heat. In the other case, they enable it to alter the bulk, figure, texture, or motion of the insensible parts of the wax, and so to make them fit to produce in me the distinct ideas of white and fluid.

2.8.25 The one sort is ordinarily taken for real qualities, and the other only for mere powers. The reason seems to be this. The ideas we have of distinct colors, sounds, and so on contain nothing at all of bulk, figure, or motion. So we are not inclined to think of them as effects of these primary qualities. The primary qualities do not appear to our senses to operate in producing them, and the ideas have no apparent agreement or conceivable connection with them. That is why we are so quick to imagine that those ideas are resemblances of something really existing in the objects themselves. Sensation discovers nothing of the bulk, figure, or motion of parts in their production, and reason cannot show how bodies, by their bulk, figure, and motion, should produce in the mind the ideas of blue or yellow, and so on. But in the other case, in the operations of bodies that change one another's qualities, we plainly discover that the quality produced commonly has no resemblance to anything in the thing producing it. So we regard it as a mere effect of power. When we receive the idea of heat or light from the sun, we tend to think it is a perception and resemblance of such a quality in the sun. But when we see wax, or a fair face, change color from the sun, we cannot imagine that this is the reception or resemblance of anything in the sun, because we do not find those different colors in the sun itself. For our senses are able to observe a likeness or unlikeness of sensible qualities in two different external objects. So when we find no such sensible quality in the thing that produced it, we are quick enough to conclude that the production of any sensible quality in any subject is an effect of mere power.

We do not take it to be the communication of some quality that was really in the efficient cause. But our senses cannot discover any unlikeness between the idea produced in us and the quality of the object producing it. So we tend to imagine that our ideas are resemblances of something in the objects. We do not take them to be the effects of certain powers lodged in the modification of their primary qualities, although the ideas produced in us have no resemblance to those primary qualities.

2.8.26 *Secondary qualities twofold; first, immediately perceivable; secondly, mediately perceivable.*—To conclude: apart from the primary qualities in bodies mentioned before, namely, the bulk, figure, extension, number, and motion of their solid parts, all the rest by which we take notice of bodies and distinguish them from one another are nothing but various powers in them. These powers depend on those primary qualities. They fit bodies either to produce various different ideas in us by operating directly on our bodies, or else to operate on other bodies and change their primary qualities, so that those bodies can produce ideas in us different from the ones they produced before. The former, I think, may be called secondary qualities immediately perceivable; the latter, secondary qualities mediately perceivable.

PERCEPTION

Perception is the first idea of reflection, and judgment silently alters what the senses deliver.

2.9.1 *Perception the first simple idea of reflection.*—Perception is the first faculty of the mind exercised about our ideas, and so it is also the first and simplest idea we have from reflection. Some call it thinking in general. But in proper English, thinking means the sort of operation of the mind about its ideas in which the mind is active, when it considers something with some degree of voluntary attention. For in bare, naked perception the mind is, for the most part, only passive, and what it perceives, it cannot avoid perceiving.

2.9.2 *Perception is only when the mind receives the impression.*—Everyone will know what perception is better by reflecting on what he himself does when he sees, hears, feels, and so on, or thinks, than by any discussion of mine. Whoever reflects on what goes on in his own mind cannot miss it. And if he does not reflect, all the words in the world cannot give him any notion of it.

2.9.3 This much is certain. Whatever alterations are made in the body, if they do not reach the mind, and whatever impressions are made on the outward parts, if they are not noticed within, there is no perception. Fire may burn our bodies with no more effect than it has on a log, unless the motion is carried on to the brain and the sense of heat, or the idea of pain, is produced there in the mind. It is in this that actual perception consists.

2.9.4 How often a man can observe this in himself! While his mind is intently occupied in contemplating some objects and closely surveying some ideas there, it takes no notice of the impressions that sounding bodies make on the organ of hearing, even when they make the same alteration that normally produces the idea of sound. There may be a sufficient impulse on the organ. But if it does not reach the mind's observation, no perception follows. And though the motion that normally produces the idea of sound is made in the ear, no sound is heard. The lack of sensation in this case is not due to any defect in the organ. Nor is it that the man's ears are less affected than at other times when he does hear. What normally produces the idea is conveyed in by the usual organ, but it is not noticed in the understanding. So it imprints no idea on the mind, and no sensation follows. Wherever there is sense or perception, then, some idea is actually produced and present in the understanding.

2.9.5 *Children, though they have ideas in the womb, have none innate.*—So I do not doubt that children receive a few ideas before they are born, by the exercise of their senses on objects that affect them in the womb. These are the unavoidable effects either of the bodies that surround them or of the wants or dis-

orders they suffer. Among these (if one may guess about things not very open to examination), I think the ideas of hunger and warmth are two. These are probably among the first ideas children have, and they hardly ever part with them again.

2.9.6 But though it is reasonable to imagine that children receive some ideas before they come into the world, those simple ideas are far from the innate principles that some argue for and that we rejected above. The ideas mentioned here are effects of sensation. They come only from certain affections of the body that happen to children in the womb, and so they depend on something outside the mind. They differ from other ideas derived from the senses in the way they are produced only by coming earlier in time. Innate principles, by contrast, are supposed to be of quite another nature. They are not supposed to come into the mind through any chance alterations in, or operations on, the body. They are supposed to be, as it were, original characters stamped on it in the very first moment of its being and constitution.

2.9.7 *Which ideas first, is not evident.*—We may reasonably suppose that some ideas are brought into the minds of children in the womb, serving the needs of their life and existence there. In the same way, after they are born, the earliest ideas imprinted are those of whatever sensible qualities they happen to meet first. Among these, light is not the least considerable, nor the weakest in its effect. How eager the mind is to be furnished with all such ideas as have no pain accompanying them may be guessed a little from newborn children. However you lay them, they always turn their eyes toward the place the light comes from. But the ideas that are most familiar at first vary with the different circumstances in which children are first received into the world. So the order in which the various ideas first come into the mind is also very various and uncertain. Nor is it very important to know it.

2.9.8 *Ideas of sensation often changed by the judgment.*—We must further consider, about perception, that in grown people the ideas received by sensation are often altered by the judgment

without our noticing it. When we set before our eyes a round globe of some uniform color, of gold, alabaster, or jet, for example, it is certain that the idea it imprints in our mind is of a flat circle, variously shaded, with various degrees of light and brightness coming to our eyes. But by use we have become accustomed to perceiving what kind of appearance convex bodies usually make in us, and what alterations are made in the reflections of light by differences in the sensible figures of bodies. So the judgment at once, out of habitual custom, alters the appearances into their causes. From what is really a variety of shadow or color, it infers the figure and makes the shading pass for a mark of figure. It frames for itself the perception of a convex figure and a uniform color, when the idea we receive is only a plane, variously colored, as is evident in painting. On this point I will insert a problem from that ingenious and studious promoter of real knowledge, the learned and worthy Mr. Molyneux, which he was kind enough to send me in a letter some months ago. It is this. Suppose a man born blind, and now adult, who has been taught by touch to distinguish between a cube and a sphere of the same metal and of nearly the same size, so that he can tell which is the cube and which the sphere when he feels one and the other.[11] Suppose then that the cube and the sphere are placed on a table, and the blind man is made to see. Query: "whether by his sight, before he touched them, he could now distinguish and tell which is the globe, which the cube?" The acute and judicious proposer answers: no. The man has gained experience of how a globe and how a cube affect his touch. But he has not yet gained the experience that what affects his touch in this way or that must affect his sight in this way or that. Nor has he learned that a protruding angle in the cube, which pressed his hand unevenly, will appear to his eye as it does in the cube. I agree with this thoughtful gentleman, whom I am proud to call my friend, in his answer to his problem. I am

11 William Molyneux (1656–1698), Irish natural philosopher and writer on optics. He sent Locke this problem in a letter of 1693, and Locke added it to the second edition (1694).

of the opinion that the blind man, at first sight, would not be able to say with certainty which was the globe and which the cube while he only saw them. Yet he could name them without error by touch, and would certainly distinguish them by the difference of the shapes he felt. I have set this down and leave it with my reader, as an occasion for him to consider how much he may owe to experience, improvement, and acquired notions, where he thinks he had not the least use of them or help from them. I do so all the more because this observant gentleman adds something further. Prompted by my book, he proposed this problem to a number of very ingenious men, and he hardly ever met one who at first gave the answer he thinks true, until they heard his reasons and were convinced.

2.9.9 But this does not usually happen, I think, with any of our ideas except those received by sight. Sight is the most comprehensive of all our senses. It conveys to our minds the ideas of light and colors, which belong to that sense alone. It also conveys the very different ideas of space, figure, and motion, whose many variations change the appearance of its proper object, namely, light and colors. So by use we bring ourselves to judge of the one by the other. In many cases, with things of which we have frequent experience, settled habit makes this happen so constantly and so quickly that we take for the reception of our sensation what is really an idea formed by our judgment. The one, namely, the idea of sensation, serves only to call up the other, and is itself hardly noticed. In the same way, a man who reads or listens with attention and understanding takes little notice of the letters or sounds, and attends to the ideas they call up in him.

2.9.10 Nor need we wonder that this happens with so little notice, if we consider how very quickly the actions of the mind are performed. The mind itself is thought to take up no space and have no extension, and in the same way its actions seem to require no time. Many of them seem to be crowded into an instant. I say this in comparison with the actions of the body. Anyone who will take the trouble to reflect on his own thoughts

can easily observe this in them. How our minds, as it were in an instant, see at one glance all the parts of a demonstration, which may well be called a long one if we consider the time it will take to put it into words and show it to someone else step by step! Second, we will not be so surprised that this happens in us with so little notice if we consider the ease we gain in doing things through the custom of doing them. That ease often makes them pass in us without our noticing. Habits, especially those begun very early, come at last to produce actions in us that often escape our observation. How often in a day we cover our eyes with our eyelids without perceiving that we are in the dark at all! People who have picked up a pet phrase by custom utter it in almost every sentence. Others notice those sounds, but they themselves neither hear nor observe them. So it is not so strange that our mind should often change the idea of its sensation into that of its judgment, and make the one serve only to call up the other, without our noticing it.

2.9.11 *Perception puts the difference between animals and inferior beings.*—This faculty of perception seems to me to be what marks the distinction between the animal kingdom and the lower parts of nature. Many plants have some degree of motion, and when other bodies touch them in different ways they very briskly change their shapes and motions. So they have been given the name of sensitive plants, from a motion that somewhat resembles what follows sensation in animals. Yet I suppose it is all mere mechanism. It is produced in no other way than the turning of a wild oat's beard when particles of moisture work their way into it, or the shortening of a rope when water is poured on it. All this is done without any sensation in the subject, and without its having or receiving any ideas.

2.9.12 Perception, I believe, exists to some degree in all sorts of animals. In some, possibly, the avenues nature has provided for receiving sensations are so few, and the perception that receives them is so obscure and dull, that it falls far short of the quickness and variety of sensation found in other animals. Yet it is sufficient for the state and condition of the sort of animals made

in this way, and wisely suited to it. So the wisdom and goodness of the Maker plainly appear in all the parts of this stupendous structure, and in all the various degrees and ranks of creatures in it.

2.9.13 We may reasonably conclude, I think, from the make of an oyster or cockle, that it does not have as many senses as a man or various other animals, nor such quick ones. And if it had them, it would not be better off for them, given its state and its inability to move itself from one place to another. What good would sight and hearing do a creature that cannot move toward or away from the objects in which it perceives good or evil at a distance? And would not quickness of sensation be a nuisance to an animal that must lie still wherever chance has once put it? There it must take in the inflow of colder or warmer, clean or foul water, as it happens to come.

2.9.14 Still, I cannot help thinking that they have some small, dull perception that distinguishes them from complete insensibility. And that this may be so, we have plain instances even in mankind itself. Take a man in whom decrepit old age has blotted out the memory of his past knowledge and wiped clean the ideas his mind was once stocked with. By destroying his sight, hearing, and smell entirely, and his taste to a great degree, it has also stopped up almost all the passages by which new ideas could enter. Or, if some of these inlets are still half open, the impressions made through them are hardly perceived, or not retained at all. How far such a person (whatever is boasted about innate principles) is above the condition of a cockle or an oyster in his knowledge and intellectual faculties, I leave to others to consider. And if a man had spent sixty years in such a state, as he might just as well as three days, I wonder what difference there would be, in any intellectual perfections, between him and the lowest kind of animal.

2.9.15 *Perception the inlet of knowledge.*—Perception, then, is the first step and degree toward knowledge, and the inlet of all its materials. So the fewer senses any man, or any other creature, has, the fewer and duller the impressions they make, and the

duller the faculties employed on them, the further he is from the knowledge found in some men. But since this comes in a great variety of degrees (as can be seen among men), it cannot be determined with certainty in the various species of animals, still less in their individual members. It is enough for me simply to have remarked here that perception is the first operation of all our intellectual faculties, and the inlet of all knowledge into our minds. I am also inclined to think that it is perception, in its lowest degree, that marks the boundary between animals and the lower ranks of creatures. But I mention this only as a conjecture in passing; it makes no difference to the matter at hand which way the learned decide it.

RETENTION AND MEMORY

The mind keeps ideas by contemplation and memory, and ideas fade unless they are renewed.

2.10.1 *Contemplation.*—The next faculty of the mind by which it makes further progress toward knowledge is what I call retention: the keeping of the simple ideas it has received from sensation or reflection. This is done in two ways. The first is by keeping an idea that has been brought into it actually in view for some time. This is called contemplation.

2.10.2 *Memory.*—The other way of retention is the power to revive in our minds ideas that, after being imprinted, have disappeared, or have been laid aside out of sight, as it were. This is what we do when we conceive heat or light, yellow or sweet, after the object has been removed. This is memory, which is, as it were, the storehouse of our ideas. The narrow mind of man cannot have many ideas in view and under consideration at once, so it needed a repository in which to lay up ideas it might have use for at another time. But our ideas are nothing but actual perceptions in the mind, which cease to be anything when there is no perception of them. So this laying up of our ideas in the repository of the memory means no more than this: the mind has a power, in many cases, to revive perceptions it

once had, with this additional perception attached to them, that it has had them before. It is in this sense that our ideas are said to be in our memories, when in fact they are actually nowhere. There is only an ability in the mind to revive them when it wants to, and, as it were, paint them anew on itself. Some it revives with more difficulty and some with less, some more vividly and others more obscurely. And so it is by the help of this faculty that we can be said to have in our understandings all those ideas that we are not actually contemplating. We can bring them into sight, make them appear again, and make them the objects of our thoughts, without the help of the sensible qualities that first imprinted them there.

2.10.3 *Attention, repetition, pleasure, and pain fix ideas.*—Attention and repetition help a great deal in fixing ideas in the memory. But the ideas that naturally make the deepest and most lasting impression from the start are those accompanied by pleasure or pain. The great business of the senses is to make us notice what harms or benefits the body. So nature has wisely arranged (as has been shown) that pain should accompany the reception of several ideas. Pain takes the place of consideration and reasoning in children, and acts more quickly than consideration in grown men. It therefore makes old and young alike avoid painful objects with the speed their preservation requires, and in both it settles in the memory a caution for the future.

2.10.4 *Ideas fade in the memory.*—As to the different degrees of lastingness with which ideas are imprinted on the memory, we may observe the following. Some of them have been produced in the understanding by an object affecting the senses once only, and never again. Others have presented themselves to the senses more than once, but have been little noticed: the mind does not set the stamp deep into itself, either because it is heedless, as in children, or because it is busy with other things, as in men intent on one thing only. And in some people, even where ideas are impressed with care and repeated impressions, the memory is very weak, whether through the constitution of the body or some other fault. In all these cases the ideas in the mind

quickly fade, and often vanish entirely from the understanding. They leave no more footprints or lingering traces of themselves than shadows do flying over fields of grain, and the mind is as empty of them as if they had never been there.

2.10.5 In this way many of the ideas produced in children's minds at the beginning of their sensation are completely lost, without the slightest glimpse of them remaining, if they are not repeated in the later course of their lives. (Some of these ideas, such as certain pleasures and pains, were perhaps there before they were born, and others came in their infancy.) This may be observed in those who lost their sight by some misfortune when they were very young. In them the ideas of colors were only slightly noticed and then no longer repeated, so they wear out entirely. Some years later there is no more notion or memory of colors left in their minds than in the minds of people born blind. It is true that the memory of some people is very tenacious, almost miraculously so. Still, there seems to be a constant decay of all our ideas, even of those struck deepest and in the most retentive minds. If they are not renewed now and then by repeated exercise of the senses, or by reflection on the kinds of objects that first occasioned them, the print wears out, and at last nothing remains to be seen. Thus the ideas of our youth, like the children of our youth, often die before us. Our minds show us the tombs we are approaching, where the brass and marble remain, but time has effaced the inscriptions and the carvings have crumbled away. The pictures drawn in our minds are laid on in fading colors, and if they are not refreshed now and then, they vanish and disappear. I will not inquire here how much the constitution of our bodies and the makeup of our animal spirits are involved in this. Nor will I ask whether the temper of the brain makes the difference, so that in some people it retains the characters drawn on it like marble, in others like freestone, and in others little better than sand. Yet it seems probable that the constitution of the body does sometimes influence the memory. We often find a disease stripping the mind of all its ideas, and

the flames of a fever in a few days reducing to dust and confusion images that seemed as lasting as if engraved in marble.

2.10.6 *Constantly repeated ideas can scarcely be lost.*—But as for the ideas themselves, it is easy to see which ones fix themselves best in the memory and remain clearest and longest there. They are those most often refreshed by a frequent return of the objects or actions that produce them, and these include the ideas conveyed into the mind by more than one way. Therefore the ideas of the original qualities of bodies, namely solidity, extension, figure, motion, and rest; those that almost constantly affect our bodies, such as heat and cold; and those that are properties of all kinds of beings, such as existence, duration, and number, which almost every object that affects our senses and every thought that occupies our minds brings along with it: these, I say, and similar ideas, are seldom entirely lost while the mind retains any ideas at all.

2.10.7 *In remembering, the mind is often active.*—In this secondary perception, as I may call it, the viewing again of the ideas lodged in the memory, the mind is often more than merely passive. The appearance of those dormant pictures sometimes depends on the will. The mind very often sets itself to work searching for some hidden idea, and turns the eye of the soul on it, as it were. Sometimes, too, ideas start up in our minds of their own accord and present themselves to the understanding. And very often they are roused and tumbled out of their dark cells into open daylight by turbulent and stormy passions. In this way our feelings bring to memory ideas that would otherwise have lain quiet and unnoticed. It should further be observed about ideas lodged in the memory and revived by the mind when occasion arises, that none of them are new ones, as the word "revive" implies. The mind also takes notice of them as of a former impression, and renews its acquaintance with them as ideas it has known before. So although ideas once imprinted are not all constantly in view, yet in remembering them we always know them to be ideas that were imprinted before, that is, ideas the understanding had in view and noticed before.

2.10.8 *Two defects in the memory, oblivion and slowness.*—In an intellectual creature, memory is next in necessity after perception. It is so important that where it is lacking, all the rest of our faculties are largely useless. Without the help of our memories we could not go beyond present objects in our thoughts, reasonings, and knowledge. In memory there may be two defects.

First, it may lose the idea entirely, and to that extent it produces complete ignorance. We can know nothing beyond what we have the idea of, so when that is gone we are completely ignorant.

Second, it may move slowly, and fail to retrieve the ideas it has laid up in store quickly enough to serve the mind when needed. If this is to a great degree, it is stupidity. Suppose that someone, through this failing of memory, does not have the ideas really preserved there ready at hand when need and occasion call for them. He might almost as well be without them altogether, since they are of little use to him. The dull man, who loses the opportunity while he is searching his mind for the ideas that would serve his turn, is not much happier in his knowledge than someone completely ignorant. It is the business of the memory, therefore, to supply the mind with those dormant ideas it has present need of. What we call invention, imagination, and quickness of mind consists in having them ready at hand on every occasion.

2.10.9 These are defects, we may note, in the memory of one man compared with another. We may conceive another defect in the memory of mankind in general, compared with some higher created intellectual beings. These beings may so far excel man in this faculty that they can have constantly in view the whole scene of all their former actions, without any of the thoughts they have ever had slipping out of sight. The omniscience of God, who knows all things past, present, and to come, and to whom the thoughts of men's hearts always lie open, may satisfy us that this is possible. For who can doubt that God may communicate any of his perfections to those glorious spirits who are his immediate attendants, in whatever proportions he pleases,

as far as created finite beings are capable of them? It is reported of that prodigy of talent, Monsieur Pascal, that until the decline of his health impaired his memory, he forgot nothing of what he had done, read, or thought at any time since he reached the age of reason. This privilege is so little known to most men that it seems almost incredible to those who, in the ordinary way, measure everyone else by themselves. Yet when considered, it may help us stretch our thoughts toward a still greater perfection of memory in higher ranks of spirits.[12] For even Mr. Pascal's memory still had the narrowness to which human minds are confined here: it had a great variety of ideas only in succession, not all at once. The various orders of angels, by contrast, may probably have larger views. Some of them may be endowed with capacities able to retain together all their past knowledge at once, and keep it constantly before them as in one picture. We can imagine that it would be no small advantage to the knowledge of a thinking man if all his past thoughts and reasonings could always be present to him. And so we may suppose this to be one of the ways in which the knowledge of separate spirits may vastly surpass ours.

2.10.10 *Animals have memory.*—Several other animals seem to have this faculty of laying up and retaining the ideas brought into the mind, as man does, and to a great degree. To pass over other instances, consider birds learning tunes, and the efforts one can see them make to hit the notes right. These put it beyond doubt for me that they have perception, and retain ideas in their memories, and use them as patterns. It seems impossible to me that they should try to conform their voices to notes of which they had no ideas, as they plainly do. Suppose I granted that sound may mechanically cause a certain motion of the animal spirits in the brains of those birds while the tune is actually playing. Suppose also that this motion may be carried on to the muscles of the wings, so that the bird is mechanically driven away by certain noises, because this may help the bird's preser-

12 Blaise Pascal (1623–1662), French mathematician, physicist, and religious writer, famous for his precocious genius.

vation. Still, that can never be taken as a reason why the sound should mechanically cause such a motion of the organs of the bird's voice as would make it conform to the notes of a foreign sound. It could not do so while the tune is playing, and much less after it has stopped. And such imitation can be of no use to the bird's preservation. What is more, it cannot with any appearance of reason be supposed (much less proved) that birds without sense and memory could bring their notes by degrees nearer and nearer to a tune played yesterday. If they have no idea of that tune in their memory, it is nowhere. It cannot be a pattern for them to imitate, or something that repeated attempts could bring them closer to. There is no reason why the sound of a pipe should leave traces in their brains that would produce similar sounds, not at first, but through their later efforts. And it is impossible to conceive why the sounds they make themselves should not leave traces for them to follow just as well as those of the pipe.

DISCERNING AND OTHER OPERATIONS

Locke describes discerning, comparing, compounding, naming and abstracting, and how animals fall short.

2.11.1 *No knowledge without discernment.*—Another faculty we may notice in our minds is that of discerning and distinguishing between the various ideas the mind has. It is not enough to have a confused perception of something in general. Unless the mind had a distinct perception of different objects and their qualities, it would be capable of very little knowledge. That would be so even if the bodies that affect us were as busy around us as they are now, and the mind were continually occupied in thinking. On this faculty of distinguishing one thing from another depend the evidence and certainty of several propositions, even very general ones, which have passed for innate truths. Men overlook the real reason why those propositions meet with universal assent, and put it down entirely to uniform impressions stamped on us from birth. In truth it depends on this clear dis-

cerning faculty of the mind, by which it perceives two ideas to be the same or different. But more of this later.

2.11.2 *The difference between wit and judgment.*—I will not examine here what causes our failure to discriminate ideas accurately from one another. It may be dullness or faults in the organs of sense, or lack of sharpness, exercise, or attention in the understanding, or the hastiness and rashness natural to some temperaments. It is enough to note that this is one of the operations the mind can reflect on and observe in itself. It matters so much to the mind's other knowledge that, to the extent this faculty is dull in itself or not rightly used for distinguishing one thing from another, to that extent our notions are confused, and our reason and judgment disturbed or misled. Quickness of mind consists in having our ideas ready at hand in the memory. In the same way, one man shows more exactness of judgment and clearness of reason than another largely because he has his ideas unconfused, and can distinguish finely between one thing and another where there is only the slightest difference. And this may perhaps explain the common observation that men with a great deal of wit and quick memories do not always have the clearest judgment or deepest reason. Wit lies mostly in assembling ideas. It puts together, quickly and with variety, those in which any resemblance or fit can be found, so as to make pleasant pictures and agreeable visions in the imagination. Judgment, on the contrary, lies at the opposite extreme. It carefully separates from one another ideas in which the slightest difference can be found, so as to avoid being misled by similarity and taking one thing for another because of their likeness. This way of proceeding is quite contrary to metaphor and allusion. Metaphor and allusion are, for the most part, where the entertainment and charm of wit lie, which strike the imagination so vividly and are therefore so welcome to everyone. Their beauty appears at first sight, and no labor of thought is required to examine what truth or reason there is in them. The mind looks no further and rests content with the attractiveness of the picture and the gaiety of the imagination. It is even a kind of

affront to set about examining wit by the strict rules of truth and good reason. This shows that wit consists in something not perfectly in accordance with them.

2.11.3 *Clearness alone prevents confusion.*—What chiefly helps us distinguish our ideas well is that they be clear and determinate. Where they are, no confusion or mistake about them will arise. This holds even if the senses should convey them from the same object differently on different occasions, as they sometimes do, and so seem to err. A man with a fever might get a bitter taste from sugar, which at another time would produce a sweet one. Yet the idea of bitter in that man's mind would be as clear and distinct from the idea of sweet as if he had tasted only gall. The same sort of body may produce one idea by taste at one time and another at another. But this causes no more confusion between the two ideas of sweet and bitter than the same piece of sugar causes between the two ideas of white and sweet, or white and round, when it produces both in the mind at the same time. And the ideas of orange and azure produced in the mind by the same infusion of lignum nephriticum are no less distinct ideas than those of the same colors taken from two very different bodies.[13]

2.11.4 *Comparing.*—Comparing ideas with one another in respect of extent, degree, time, place, or any other circumstances is another operation of the mind about its ideas. On it depends that whole large tribe of ideas included under relations. How vast its extent is I will have occasion to consider later.

2.11.5 *Animals compare only imperfectly.*—How far animals share in this faculty is not easy to determine. I imagine they do not have it to any great degree. They probably have several ideas that are distinct enough. But suppose the understanding has distinguished ideas well enough to perceive them to be perfectly different, and consequently two. To cast about then and consider in what circumstances they can be compared seems to me

13 Lignum nephriticum, a Mexican wood whose infusion in water looks golden-orange by transmitted light and blue by reflected light; Robert Boyle had described it.

to be the prerogative of the human understanding. And so I think beasts compare their ideas no further than in respect of some sensible circumstances attached to the objects themselves. Men may also be observed to have another power of comparing, which concerns general ideas and is useful only in abstract reasoning. We may probably conjecture that beasts do not have it.

2.11.6 *Compounding.*—The next operation we may observe in the mind about its ideas is composition. By it the mind puts together several of the simple ideas it has received from sensation and reflection and combines them into complex ones. Under composition we may also count enlarging. Here the composition is not as evident as in more complex ideas, but it is still a putting together of several ideas, though of the same kind. Thus by adding several units together we make the idea of a dozen, and by putting together the repeated ideas of several perches we form that of a furlong.

2.11.7 *Animals compound but little.*—In this too, I suppose, animals fall far short of men. They do take in and retain together several combinations of simple ideas. Possibly, for example, a master's shape, smell, and voice make up the complex idea a dog has of him, or rather are so many distinct marks by which he knows him. Yet I do not think animals ever compound such ideas of themselves and make complex ideas. And perhaps, even where we think they have complex ideas, it is only one simple idea that guides them in recognizing several things, and they may distinguish these things less by sight than we imagine. I have been reliably informed that a female dog will nurse, play with, and be fond of young foxes as much as her own puppies, and in place of them. You only have to get the cubs to suck at her long enough for her milk to go through them. And animals that have a large brood of young at once do not seem to have any knowledge of their number. They are greatly concerned about any of their young taken from them while they are within sight or hearing. Yet if one or two are stolen in their absence or without noise,

they do not seem to miss them, or to have any sense that their number has decreased.

2.11.8 *Naming.*—When children have got ideas fixed in their memories by repeated sensations, they gradually begin to learn the use of signs. Once they have acquired the skill of using the organs of speech to form articulate sounds, they begin to use words to signify their ideas to others. They sometimes borrow these verbal signs from others and sometimes make them up themselves. One can see this in the new and unusual names children often give things when they first begin to use language.

2.11.9 *Abstraction.*—The use of words, then, is to stand as outward marks of our inner ideas, and those ideas are taken from particular things. So if every particular idea we take in had its own name, names would have to be endless. To prevent this, the mind makes the particular ideas it receives from particular objects become general. It does this by considering them as they are in the mind, as such appearances, separate from all other existences and from the circumstances of real existence, such as time, place, or any other accompanying ideas. This is called abstraction. By it, ideas taken from particular beings become general representatives of all of the same kind, and their names become general names, applicable to whatever exists that conforms to such abstract ideas. The understanding lays up such precise, bare appearances in the mind, usually with names attached to them, without considering how, from where, or with what others they came there. It keeps them as standards by which to rank real existences into sorts, according as they agree with these patterns, and to name them accordingly. Suppose the mind observes today in chalk or snow the same color it received yesterday from milk. It considers that appearance alone and makes it a representative of all of that kind. Having given it the name "whiteness," it uses that sound to signify the same quality wherever it may be imagined or met with. And this is how universals, whether ideas or terms, are made.

2.11.10 *Animals do not abstract.*—It may be doubted whether beasts compound and enlarge their ideas in that way to any

degree. But I think I can be positive about this: the power of abstracting is not in them at all. Having general ideas is what makes a complete distinction between man and animals, and it is an excellence the faculties of animals by no means attain. It is evident that we see no trace in them of using general signs for universal ideas. Since they have no use of words or of any other general signs, we have reason to think they lack the faculty of abstracting, or making general ideas.

2.11.11 Nor can their having no use or knowledge of general words be put down to their lacking suitable organs for forming articulate sounds. We find that many of them can shape such sounds and pronounce words distinctly enough, but never with any such application. On the other side, men who lack words through some defect in their organs still manage to express their universal ideas by signs that serve them in place of general words. This is a faculty in which we see beasts fall short. And so I think we may suppose that it is in this that the species of animals are set apart from man. This is the proper difference by which they are wholly separated, and which in the end widens to so vast a distance. For if they have any ideas at all, and are not mere machines (as some would have them), we cannot deny that they have some reason. It seems as evident to me that some of them do reason in certain cases as that they have sense. But they reason only about particular ideas, just as they received them from their senses. Even the best of them are confined within those narrow limits, and do not, I think, have the faculty of enlarging them by any kind of abstraction.

2.11.12 *The intellectually disabled and the mentally ill.*—Careful observation of the various ways in which the intellectually disabled falter would no doubt reveal how far they are affected by the lack or weakness of any or all of the foregoing faculties. Those who perceive only dully, or retain poorly the ideas that come into their minds, or cannot readily call them up or compound them, will have little material to think about. Those who cannot distinguish, compare, and abstract would hardly be able to understand and use language, or to judge or reason to any tol-

erable degree. They could reason only a little and imperfectly, about things present and very familiar to their senses. And indeed, any of the faculties mentioned above, if missing or disordered, produces corresponding effects in men's understanding and knowledge.

2.11.13 In short, the defect in the intellectually disabled seems to come from a lack of quickness, activity, and movement in the intellectual faculties, which deprives them of reason. The mentally ill, on the other hand, seem to suffer from the opposite extreme. They do not appear to me to have lost the faculty of reasoning. Rather, they have joined some ideas together very wrongly and mistake them for truths, and they err as men do who argue correctly from wrong principles. Through the violence of their imaginations they have taken their fancies for realities, and they draw correct conclusions from them. Thus you will find a man whose mind is disordered imagining himself a king, and by a correct inference demanding suitable attendance, respect, and obedience. Others who have thought themselves made of glass have taken the precautions needed to preserve such fragile bodies. This is how a man who is very sober and sound in understanding in all other things may be as frantic on one particular point as anyone in Bedlam. It happens if incoherent ideas have been cemented together so firmly that they remain united, either through some sudden very strong impression or through long fixing his imagination on one sort of thought. But there are degrees of madness, as there are of intellectual weakness; the disorderly jumbling together of ideas is greater in some people and less in others.[14] In short, the difference between the intellectually disabled and the mentally ill seems to lie in this. The mentally ill put wrong ideas together, and so make wrong propositions, but argue and reason correctly from them. The intellectually disabled make very few propositions or none, and hardly reason at all.

2.11.14 *Method.*—These, I think, are the first faculties and operations of the mind that it uses in understanding. They are exer-

cised on all its ideas in general, but the examples I have given so far have been mainly of simple ideas. I have added the explanation of these faculties of the mind to that of simple ideas, before coming to what I have to say about complex ones, for the following reasons:

First, several of these faculties are exercised at first mainly on simple ideas. So by following nature in its ordinary course, we may trace and discover them in their origin, progress, and gradual improvement.

Second, in most men's minds simple ideas are usually much clearer, more precise, and more distinct than complex ones. So by observing how the faculties of the mind operate on simple ideas, we can better examine and learn how the mind abstracts, names, compares, and performs its other operations on complex ideas, where we are much more liable to make mistakes.

Third, these very operations of the mind on ideas received from sensation are themselves, when reflected on, another set of ideas. They derive from that other source of our knowledge which I call reflection, and so they are fit to be considered here, after the simple ideas of sensation. I have only touched briefly on compounding, comparing, abstracting, and so on, since I will have occasion to treat them at greater length elsewhere.

2.11.15 *These are the beginnings of human knowledge.*—And so I have given a short and, I think, true history of the first beginnings of human knowledge. It shows where the mind gets its first objects, and by what steps it progresses to laying in and storing up the ideas out of which all the knowledge it is capable of is to be framed. On whether I am right in this, I must appeal to experience and observation. The best way to arrive at truth is to examine things as they really are, and not to conclude that they are as we imagine on our own, or as others have taught us to imagine.

2.11.16 *Appeal to experience.*—To be honest, this is the only way I can discover by which the ideas of things are brought into the

14 Bedlam: the Bethlem Royal Hospital in London, the city's asylum for the mentally ill.

understanding. If other men have either innate ideas or infused principles, they have reason to enjoy them. And if they are sure of it, others cannot possibly deny them the privilege they have over their neighbors. I can speak only of what I find in myself, and of what agrees with certain notions. If we examine the whole course of men in their various ages, countries, and upbringings, these notions seem to depend on the foundations I have laid, and to correspond with this method in all its parts and degrees.

2.11.17 *Dark room.*—I do not claim to teach, but to inquire. So I cannot help confessing here again that external and internal sensation are the only passages of knowledge to the understanding that I can find. These alone, as far as I can discover, are the windows by which light is let into this dark room. For it seems to me that the understanding is not much unlike a small room wholly shut off from light, with only a little opening left to let in external visible resemblances, or ideas of things outside. Suppose the pictures coming into such a dark room would only stay there, and lie in such order as to be found when needed. Then it would very much resemble the understanding of a man, with respect to all objects of sight and the ideas of them.

These are my guesses about the means by which the understanding comes to have and retain simple ideas and their modes, along with some other operations about them. I now go on to examine some of these simple ideas and their modes a little more particularly.

COMPLEX IDEAS

The mind combines, relates and abstracts simple ideas; complex ideas are modes, substances or relations.

2.12.1 *Made by the mind out of simple ones.*—So far we have considered those ideas in the reception of which the mind is only passive. These are the simple ones received from sensation and reflection, mentioned before. The mind cannot make any of them for itself, nor can it have any idea that does not consist

wholly of them. But though the mind is wholly passive in receiving all its simple ideas, it also performs several acts of its own. By these acts the other ideas are framed out of its simple ideas, which are the materials and foundations of the rest. The acts of the mind in which it exerts its power over its simple ideas are chiefly these three: 1. Combining several simple ideas into one compound one; this is how all complex ideas are made. 2. The second is bringing two ideas, whether simple or complex, together and setting them side by side, so as to view them at once without uniting them into one; this is how the mind gets all its ideas of relations. 3. The third is separating them from all the other ideas that accompany them in their real existence. This is called abstraction, and this is how all its general ideas are made. This shows that man's power and its way of operating are much the same in the material and the intellectual world. In both, the materials are such that he has no power to make or destroy them. So all man can do is either unite them, or set them side by side, or separate them entirely. In considering complex ideas I will begin here with the first of these, and come to the other two in their proper places. Simple ideas are observed to exist in various combinations united together. In the same way the mind has a power to consider several of them united together as one idea, and not only as they are united in external objects, but also as it has joined them itself. I call ideas made up in this way of several simple ones put together complex: for example, beauty, gratitude, a man, an army, the universe. They are compounded of various simple ideas, or of complex ideas made up of simple ones. Yet when the mind pleases, each is considered by itself as one entire thing and signified by one name.

2.12.2 *Made voluntarily.*—In this faculty of repeating and joining together its ideas, the mind has great power to vary and multiply the objects of its thoughts, far beyond what sensation or reflection supplied it with. But all this is still confined to the simple ideas it received from those two sources, which are the ultimate materials of everything it puts together. Simple ideas

all come from things themselves, and of these the mind can have no more, and no others, than what are suggested to it. It can have no ideas of sensible qualities except those that come from outside through the senses. It can have no ideas of any other kind of operations of a thinking substance except those it finds in itself. But once it has got these simple ideas, it is not confined merely to observation and to what presents itself from outside. By its own power it can put together the ideas it has and make new complex ones, which it never received united in that way.

2.12.3 *Are either modes, substances, or relations.*—Complex ideas fill and entertain men's thoughts in infinite number and endless variety, however they are compounded and recompounded. Yet I think they can all be brought under these three heads: 1. Modes. 2. Substances. 3. Relations.

2.12.4 *Modes.*—First, I call modes those complex ideas that, however compounded, do not contain the supposition that they subsist by themselves. They are considered as dependencies on substances, or affections of them. Examples are the ideas signified by the words "triangle," "gratitude," "murder," and so on. If in this I use the word "mode" in a somewhat different sense from its ordinary meaning, I beg your pardon. In discussions that depart from commonly received notions, it is unavoidable either to make new words or to use old words in a somewhat new sense. In the present case the second is perhaps the more tolerable of the two.

2.12.5 *Simple and mixed modes.*—There are two sorts of these modes that deserve separate consideration. First, there are some that are only variations or different combinations of the same simple idea, without any other mixed in, such as a dozen or a score. These are nothing but the ideas of so many distinct units added together. I call these simple modes, because they are contained within the bounds of one simple idea.

Second, there are others compounded of simple ideas of several kinds, put together to make one complex idea. Beauty, for example, consists of a certain composition of color and figure

that causes delight in the beholder. Theft is the concealed change of possession of anything without the owner's consent, and it plainly contains a combination of several ideas of several kinds. These I call mixed modes.

2.12.6 *Substances, single or collective.*—Second, the ideas of substances are combinations of simple ideas that are taken to represent distinct particular things subsisting by themselves. In these, the supposed or confused idea of substance, such as it is, always comes first and is the chief part. Thus if we join to substance the simple idea of a certain dull whitish color, with certain degrees of weight, hardness, ductility, and fusibility, we have the idea of lead. And a combination of the ideas of a certain sort of figure, with the powers of motion, thought, and reasoning, joined to substance, makes the ordinary idea of a man. There are also two sorts of ideas of substances. One is of single substances as they exist separately, such as a man or a sheep. The other is of several of these put together, such as an army of men or a flock of sheep. Each of these collective ideas of several substances put together is just as much one single idea as the idea of a man, or of a unit.

2.12.7 *Relation.*—Third, the last sort of complex ideas is what we call relation. It consists in considering and comparing one idea with another. We shall treat these several kinds in order.

2.12.8 *The abstrusest ideas from the two sources.*—If we trace the progress of our minds, and observe carefully how the mind repeats, adds together, and unites the simple ideas it has received from sensation or reflection, this will lead us farther than we might at first have imagined. I believe we shall find, if we look carefully at the origins of our notions, that even the most abstruse ideas, however remote they may seem from sense or from any operations of our own minds, are only ideas the understanding frames for itself. It does so by repeating and joining together ideas it had either from objects of sense or from its own operations on them. So even those large and abstract ideas are derived from sensation or reflection. They are nothing but what the mind may and does reach by the ordinary use of its

own faculties, working on ideas received from objects of sense or from the operations it observes in itself concerning them. I shall try to show this in the ideas we have of space, time, and infinity, and a few others that seem the most remote from those origins.

SPACE

The simple modes of space are distance, figure and place, and space is distinct from body.

2.13.1 *Simple modes.*—In the earlier part I often mentioned simple ideas, which are truly the materials of all our knowledge. But there I treated them mainly according to the way they come into the mind, rather than as distinguished from other, more compounded ideas. So it may not be out of place to look at some of them again from this point of view. I shall examine the different modifications of the same idea that the mind either finds in existing things or can make within itself, without the help of any outside object or any suggestion from elsewhere.

These modifications of any one simple idea, which, as I have said, I call simple modes, are as perfectly different and distinct ideas in the mind as those that are farthest apart or most contrary. The idea of two is as distinct from the idea of one as blueness is from heat, or as either of these is from any number. Yet it is made up only of the simple idea of a unit, repeated. Repetitions of this kind, joined together, make the distinct simple modes of a dozen, a gross, a million.

2.13.2 *Idea of space.*—I shall begin with the simple idea of space. I showed above, in chapter 4, that we get the idea of space both by sight and by touch. I think this is so evident that it would be as pointless to prove that men see a distance between bodies of different colors, or between the parts of the same body, as to prove that they see colors themselves. It is just as obvious that they can do the same in the dark by feeling and touch.

2.13.3 *Space and extension.*—This space, considered only in length between any two beings, without considering anything

else between them, is called distance. If it is considered in length, breadth, and thickness, I think it may be called capacity. The term "extension" is usually applied to it however it is considered.

2.13.4 *Immensity.*—Each different distance is a different modification of space, and each idea of any different distance or space is a simple mode of this idea. For the sake of measuring, and by the habit of it, men fix in their minds the ideas of certain set lengths, such as an inch, a foot, a yard, a fathom, a mile, the diameter of the earth, and so on. These are so many distinct ideas made up only of space. When any such set lengths or measures of space have become familiar to men's thoughts, they can repeat them in their minds as often as they like, without mixing in or attaching the idea of body or of anything else. They can frame for themselves the ideas of long, square, or cubic feet, yards, or fathoms, here among the bodies of the universe or beyond the farthest bounds of all bodies. And by continually adding these to one another, they can enlarge their ideas of space as much as they please. We have the power to repeat or double any idea we have of any distance and add it to the previous one as often as we like, without ever being able to come to any stop or limit, however much we enlarge it. This power is what gives us the idea of immensity.

2.13.5 *Figure.*—There is another modification of this idea, which is nothing but the relation that the parts of the boundary of extension, or of circumscribed space, have among themselves. Touch discovers this in sensible bodies whose extremities come within our reach. The eye takes it both from bodies and from colors whose boundaries are within its view. The mind observes how the extremities end, either in straight lines that meet at discernible angles, or in curved lines in which no angles can be perceived. By considering these as they relate to one another in all parts of the extremities of any body or space, it has the idea we call figure, which offers the mind infinite variety. Besides the vast number of different figures that really exist in coherent masses of matter, the mind has at its disposal a stock that is per-

fectly inexhaustible. It can vary the idea of space and so keep making new compositions, by repeating its own ideas and joining them as it pleases. In this way it can multiply figures without end.

2.13.6 *Figure.*—The mind has a power to repeat the idea of any length stretched out in a straight line and join it to another in the same direction, which doubles the length of that straight line. Or it can join another at whatever inclination it thinks fit, and so make whatever sort of angle it pleases. It can also shorten any line it imagines, by taking away one-half, one-fourth, or whatever part it pleases, without ever being able to come to an end of such divisions. So it can make an angle of any size, and the lines that form its sides of whatever length it pleases. And by joining these again to other lines of different lengths and at different angles, until it has completely enclosed a space, it is evident that it can multiply figures, both in shape and in capacity, without limit. All of these are only so many different simple modes of space.

What it can do with straight lines it can also do with curved lines, or with curved and straight lines together. And what it can do with lines it can also do with surfaces. This may lead us to further thoughts about the endless variety of figures the mind has the power to make, and so about how it multiplies the simple modes of space.

2.13.7 *Place.*—Another idea that comes under this head and belongs to this family is what we call place. In simple space we consider the relation of distance between any two bodies or points. In our idea of place we consider the relation of distance between anything and any two or more points that are regarded as keeping the same distance from one another, and so regarded as at rest. When we find a thing today at the same distance it was yesterday from two or more points that have not since changed their distance from one another, and with which we compared it then, we say it has kept the same place. But if it has noticeably changed its distance from either of those points, we say it has changed its place. In ordinary speech, though, and in the com-

mon notion of place, we do not always observe exactly its distance from these precise points. We observe instead its distance from larger portions of sensible objects, to which we consider the placed thing to be related, and whose distance from it we have some reason to notice.

2.13.8 Thus when a set of chessmen stand on the same squares of the chessboard where we left them, we say they are all in the same place, or unmoved, even though the chessboard may meanwhile have been carried from one room into another. This is because we compared them only to the parts of the chessboard, which keep the same distance from one another. We also say the chessboard is in the same place it was, if it stays in the same part of the cabin, even though the ship it is in may be sailing all the while. And the ship is said to be in the same place if it has kept the same distance from the parts of the neighboring land, even though the earth may have turned round. So the chessmen, the board, and the ship have each changed place with respect to remoter bodies that have kept the same distance from one another. Still, the distance from certain parts of the board is what determines the place of the chessmen. The distance from the fixed parts of the cabin, with which we made the comparison, is what determined the place of the chessboard. And the fixed parts of the earth are what we used to determine the place of the ship. So these things may be said to be in the same place in those respects. But since their distance from certain other things, which we did not consider here, has changed, they have undoubtedly changed place in that respect. And we ourselves shall think so when we have occasion to compare them with those other things.

2.13.9 But this modification of distance that we call place was made by men for their common use, so that they could designate the particular position of things when they needed to. So men consider and determine place by reference to whatever adjacent things best serve their present purpose. They do not consider other things that, for another purpose, would better determine the place of the same thing. Thus on the chessboard,

the purpose of designating the place of each chessman is confined to that checkered piece of wood, and it would defeat that purpose to measure it by anything else. But when these same chessmen have been put away in a bag, if anyone asked where the black king is, it would be proper to determine its place by the parts of the room it was in, not by the chessboard. There is a different purpose in designating the place it is in now from when it was on the chessboard in play, and so its place must be determined by other bodies. Likewise, if anyone asked where the verses are that tell the story of Nisus and Euryalus, it would be quite improper to determine their place by saying they were in such-and-such a part of the earth, or in Bodley's library. The right designation of their place would be by the parts of Virgil's works. The proper answer would be that these verses are about the middle of the ninth book of his *Aeneid*, and that they have always stayed in the same place ever since Virgil was printed. That is true even though the book itself has been moved a thousand times. Here the use of the idea of place is to know in what part of the book the story is, so that when the occasion arises we know where to find it and can turn to it.[15]

2.13.10 *Place.*—I think it is plain that our idea of place is nothing but the kind of relative position of a thing that I have just described. This will be readily admitted when we consider that we can have no idea of the place of the universe, though we can have one of all its parts. Beyond the universe we have no idea of any fixed, distinct, particular beings by reference to which we could imagine it to have any relation of distance. All beyond it is one uniform space or expanse, in which the mind finds no variety and no marks. To say that the world is somewhere means no more than that it exists. The phrase is borrowed from place, but it signifies only the world's existence, not its location. When someone can discover and frame in his mind, clearly and distinctly, the place of the universe, he will be able to tell us

15 Nisus and Euryalus are two Trojan friends whose night raid and death are told in *Aeneid* 9. "Bodley's library" is the Bodleian Library at Oxford, refounded by Sir Thomas Bodley in 1602.

whether it moves or stands still in the featureless void of infinite space. It is true that the word "place" sometimes has a looser sense and stands for the space that a body takes up. In that sense the universe is in a place. So we get the idea of place by the same means as the idea of space, of which it is only a particular, limited consideration: namely, by sight and touch. Through either of these we receive into our minds the ideas of extension or distance.

2.13.11 *Extension and body not the same.*—Some people would persuade us that body and extension are the same thing. Either they change the meaning of words, which I would not suspect them of, since they have so severely condemned other people's philosophy for resting too much on the uncertain meaning or deceptive obscurity of doubtful or meaningless terms. Or else, if by body and extension they mean the same as other people do, namely by body something solid and extended, whose parts are separable and movable in different ways, and by extension only the space that lies between the extremities of those solid coherent parts and is occupied by them, then they confuse very different ideas with one another. I appeal to every man's own thoughts: is not the idea of space as distinct from the idea of solidity as it is from the idea of scarlet? It is true that solidity cannot exist without extension. But neither can scarlet exist without extension, and this does not prevent them from being distinct ideas. Many ideas require others as necessary to their existence or their conception, and yet they are very distinct ideas. Motion can neither exist nor be conceived without space, and yet motion is not space, nor space motion. Space can exist without motion, and they are very distinct ideas. And so, I think, are the ideas of space and solidity. Solidity is so inseparable from the idea of body that on it depend body's filling of space, its contact, its impulse, and its communication of motion by impulse. If it is a good argument that spirit is different from body because thinking does not include the idea of extension, then the same argument will be just as valid, I suppose, to prove that space is not body, because space does not include the idea

of solidity. Space and solidity are as distinct ideas as thinking and extension, and just as wholly separable from each other in the mind. It is evident, then, that body and extension are two distinct ideas. For:

2.13.12 First, extension includes no solidity, and no resistance to the motion of body, as body does.

2.13.13 Second, the parts of pure space are inseparable from one another, so that their continuity cannot be separated either really or mentally. I challenge anyone to remove any part of it from another part with which it is continuous, even in thought. To divide and separate actually is, I think, to make two surfaces where before there was continuity, by removing the parts from one another. To divide mentally is to make in the mind two surfaces where before there was continuity, and to consider them as removed from each other. This can only be done with things the mind regards as capable of being separated, and of acquiring by separation new distinct surfaces that they do not have now but could have. But neither of these ways of separating, real or mental, is, I think, compatible with pure space.

It is true that a man may consider as much of such a space as corresponds or is equal to a foot, without considering the rest. That is indeed a partial consideration, but it is not even mental separation or division. A man can no more divide mentally without considering two surfaces separate from each other than he can divide actually without making two surfaces disjoined from each other. But a partial consideration is not separating. A man may consider the light in the sun without its heat, or mobility in body without its extension, without thinking of their separation. The one is only a partial consideration, ending in one thing alone. The other is a consideration of both, as existing separately.

2.13.14 Third, the parts of pure space are immovable, which follows from their inseparability. Motion is nothing but change of distance between any two things. But this cannot happen between parts that are inseparable, which therefore must be at perpetual rest with respect to one another.

So the determinate idea of simple space distinguishes it plainly and sufficiently from body, since its parts are inseparable, immovable, and offer no resistance to the motion of body.

2.13.15 *The definition of extension explains it not.*—If anyone asks me what this space I speak of is, I will tell him when he tells me what his extension is. To say, as is usually done, that extension is having *partes extra partes*, parts outside parts, is only to say that extension is extension. How am I better informed about the nature of extension when I am told that extension is having extended parts outside extended parts, that is, that extension consists of extended parts? It is as if someone asked me what a fiber was, and I answered that it was a thing made up of several fibers. Would that enable him to understand what a fiber was any better than before? Or would he not rather have reason to think that I meant to make fun of him, not to instruct him seriously?

2.13.16 *Division of beings into bodies and spirits proves not space and body the same.*—Those who argue that space and body are the same bring this dilemma: this space is either something or nothing. If there is nothing between two bodies, they must necessarily touch. If it is granted to be something, they ask whether it is body or spirit. I answer with another question: who told them that there was, or could be, nothing but solid beings that cannot think and thinking beings that are not extended? For that is all they mean by the terms "body" and "spirit."

SUBSTANCE AND ACCIDENTS

Locke admits he has no clear idea of substance and mocks it as the Indian philosopher's elephant.

2.13.17 *Substance which we know not, no proof against space without body.*—If I am asked, as people usually are, whether this space empty of body is substance or accident, I shall readily answer that I do not know. Nor shall I be ashamed to admit my ignorance until those who ask show me a clear, distinct idea of substance.

2.13.18 I try as far as I can to free myself from the fallacies we are apt to impose on ourselves by taking words for things. It does not help our ignorance to pretend to knowledge where we have none, by making a noise with sounds that have no clear and distinct meanings. Names made at will neither alter the nature of things nor make us understand them, except insofar as they are signs of determinate ideas and stand for them. I ask those who put so much weight on the sound of these two syllables, "substance," to consider this. When they apply it, as they do, to the infinite, incomprehensible God, to finite spirit, and to body, is it in the same sense? Does it stand for the same idea when each of those three very different beings is called a substance? If so, does it follow that God, spirits, and body, agreeing in the same common nature of substance, differ only by a mere difference in the modification of that substance? That would be like a tree and a pebble, which are body in the same sense and agree in the common nature of body, and differ only in the mere modification of that common matter. That would be a very harsh doctrine. Suppose they say they apply it to God, finite spirits, and matter in three different senses: that it stands for one idea when God is said to be a substance, for another when the soul is called a substance, and for a third when a body is called so. If the name "substance" stands for three separate, distinct ideas, they would do well to make those distinct ideas known, or at least to give them three distinct names. That would prevent, in so important a notion, the confusion and errors that naturally follow from the indiscriminate use of so doubtful a term. Far from being suspected of having three distinct meanings, in ordinary use it scarcely has one clear, distinct meaning. And if they can make three distinct ideas of substance in this way, what prevents someone else from making a fourth?

2.13.19 *Substance and accidents, of little use in philosophy.*—Those who first took up the notion of accidents as a sort of real beings that needed something to inhere in were forced to invent the word "substance" to support them. If the poor Indian philosopher, who imagined that the earth too needed something to

hold it up, had only thought of this word "substance," he would not have had to go to the trouble of finding an elephant to support it and a tortoise to support his elephant. The word "substance" would have done the job perfectly.[16] And the person who asked might have taken it as just as good an answer from an Indian philosopher that substance, without knowing what it is, is what supports the earth, as we take it to be a sufficient answer and sound doctrine from our European philosophers that substance, without knowing what it is, is what supports accidents. So of substance we have no idea of what it is, but only a confused, obscure idea of what it does.

2.13.20 Whatever a learned man may make of this, an intelligent Native American who inquired into the nature of things would hardly take it as a satisfactory account if, wanting to learn our architecture, he were told that a pillar was a thing supported by a base, and a base something that supported a pillar. Would he not think he was being mocked instead of taught by an account like that? And someone unfamiliar with them would be generously instructed in the nature of books and what they contain if he were told that all learned books consist of paper and letters, that letters are things inhering in paper, and that paper is a thing that holds up letters. A remarkable way of getting clear ideas of letters and paper! If the Latin words *inhaerentia* and *substantia* were turned into the plain English words that correspond to them, and were called "sticking on" and "underpropping," they would better show us the very great clearness there is in the doctrine of substance and accidents, and what use they are in deciding questions in philosophy.

16 Locke refers to a cosmology reported by European travelers, in which the earth rests on an elephant and the elephant on a tortoise; he uses the image again at 2.23.2.

THE POSSIBILITY OF A VACUUM

Arguments from the edge of the world, annihilation and motion show that empty space is possible.

2.13.21 *A vacuum beyond the utmost bounds of body.*—But to return to our idea of space. If body is not supposed to be infinite, which I think no one will claim, I would ask this: if God placed a man at the outer edge of all bodily beings, could he not stretch his hand out beyond his body? If he could, then he would put his arm where there was previously space without body. And if he spread his fingers there, there would still be space without body between them. If he could not stretch out his hand, it must be because of some external obstacle. For we suppose him alive, with the same power of moving the parts of his body that he has now. That is not impossible in itself, if God were pleased to have it so; or at least it is not impossible for God to move him in that way. And then I ask whether what prevents his hand from moving outward is substance or accident, something or nothing. When they have settled that, they will be able to settle for themselves what it is that is, or may be, between two bodies at a distance, which is not body and has no solidity. Meanwhile the argument is at least as good that where nothing hinders it, as beyond the farthest bounds of all bodies, a body set in motion may keep moving, as the argument that where there is nothing between them, two bodies must necessarily touch. For pure space in between is enough to remove the necessity of mutual contact, but mere space in the way is not enough to stop motion. The truth is, these men must either admit that they think body is infinite, though they are reluctant to say it outright, or else affirm that space is not body. I would very much like to meet the thinking man who can set any bounds to space in his thoughts, any more than he can to duration, or who hopes by thinking to reach the end of either. So if his idea of eternity is infinite, so is his idea of immensity. They are both finite or both infinite alike.

2.13.22 *The power of annihilation proves a vacuum.*—Further, those who maintain that space cannot exist without matter must not only make body infinite. They must also deny that God has the power to annihilate any part of matter. No one, I suppose, will deny that God can put an end to all motion in matter, fix all the bodies of the universe in perfect quiet and rest, and keep them so as long as he pleases. Then whoever grants that God can, during such a general rest, annihilate either this book or the body of the person reading it must necessarily admit the possibility of a vacuum. For it is evident that the space filled by the parts of the annihilated body will still remain, and will be a space without body. The surrounding bodies, being in perfect rest, are a wall of adamant, and in that state they make it perfectly impossible for any other body to get into that space. Indeed, the necessary motion of one particle of matter into the place from which another particle has been removed is only a consequence of the supposition of plenitude. That supposition will therefore need some better proof than a supposed matter of fact that experiment can never establish. Our own clear and distinct ideas plainly satisfy us that there is no necessary connection between space and solidity, since we can conceive the one without the other. And those who argue for or against a vacuum thereby admit that they have distinct ideas of vacuum and plenum, that is, that they have an idea of extension empty of solidity, even though they deny that it exists. Otherwise they are arguing about nothing at all. Those who alter the meaning of words so far as to call extension body, and so make the whole essence of body nothing but pure extension without solidity, must talk absurdly whenever they speak of a vacuum, since it is impossible for extension to be without extension. For "vacuum," whether we affirm or deny its existence, signifies space without body. No one can deny that its existence is possible unless he makes matter infinite and takes from God the power to annihilate any particle of it.

2.13.23 *Motion proves a vacuum.*—But without going beyond the farthest bounds of body in the universe, or appealing to God's

omnipotence, to find a vacuum, the motion of bodies within our view and in our neighborhood seems to me plainly to prove it. I ask anyone to divide a solid body, of any size he likes, so that its solid parts can move up and down freely in every direction within the bounds of its surface, without leaving in it a void space as big as the smallest part into which he has divided that solid body. Where the smallest particle of the divided body is as big as a mustard seed, a void space equal to the bulk of a mustard seed is required to make room for the free motion of the parts of the divided body within the bounds of its surface. If so, then where the particles of matter are a hundred million times smaller than a mustard seed, there must also be a space empty of solid matter as big as a hundred-millionth part of a mustard seed. For if it holds in the one case, it will hold in the other, and so on without end. And however small this void space may be, it destroys the hypothesis of plenitude. For if there can be a space empty of body equal to the smallest separate particle of matter now existing in nature, it is still space without body. It makes as great a difference between space and body as if it were a *mega chasma*, a great gulf, a distance as wide as any in nature. So if we suppose that the void space needed for motion is not equal to the smallest bit of the divided solid matter, but to a tenth or a thousandth of it, the same conclusion will always follow: there is space without matter.[17]

2.13.24 *The ideas of space and body distinct.*—But since the question here is "whether the idea of space or extension is the same as the idea of body," it is not necessary to prove the real existence of a vacuum, only the idea of it. And men plainly have that idea when they inquire and argue about whether there is a vacuum or not. If they did not have the idea of space without body, they could not raise a question about its existence. And if their idea of body did not include something more than the mere idea of space, they could have no doubt about the plenitude of the world. It would then be as absurd to ask whether

17 *Mega chasma* ("a great gulf") echoes Luke 16:26, the gulf fixed between Abraham and the rich man.

there were space without body as to ask whether there were space without space, or body without body, since these would be only different names for the same idea.

2.13.25 *Extension being inseparable from body, proves it not the same.*—It is true that the idea of extension attaches itself so inseparably to all visible qualities and most tangible ones that it does not allow us to see any external object, or feel more than a very few, without taking in impressions of extension. This readiness of extension to make itself noticed so constantly along with other ideas has, I suspect, led some people to make the whole essence of body consist in extension. That is not very surprising, since some have had their minds so filled with the idea of extension by their eyes and touch, the busiest of all our senses, and so wholly possessed by it, that they allowed no existence to anything that did not have extension. I shall not argue now with those who take the measure and possibility of all being only from their own narrow and crude imaginations. Here I am dealing only with those who conclude that the essence of body is extension because, they say, they cannot imagine any sensible quality of any body without extension. I ask them to consider this. Had they reflected on their ideas of tastes and smells as much as on those of sight and touch, or even examined their ideas of hunger and thirst and various other pains, they would have found that these include no idea of extension at all. Extension is only an affection of body, like the rest, discoverable by our senses, which are hardly sharp enough to see into the pure essences of things.

2.13.26 If ideas that are constantly joined to all others must for that reason be concluded to be the essence of the things that always have those ideas joined to them and are inseparable from them, then unity is without doubt the essence of everything. For there is no object of sensation or reflection that does not carry with it the idea of one. But we have already shown well enough how weak this kind of argument is.

2.13.27 *Ideas of space and solidity distinct.*—To conclude: whatever people may think about the existence of a vacuum, this much is

plain to me. We have as clear an idea of space distinct from solidity as we have of solidity distinct from motion, or of motion distinct from space. We have no two ideas more distinct than these. We can as easily conceive space without solidity as we can conceive body or space without motion, however certain it is that neither body nor motion can exist without space. But whether anyone will take space to be merely a relation arising from the existence of other beings at a distance from each other, or whether they will think that the words of the most knowing king Solomon, "The heaven, and the heaven of heavens cannot contain thee," or the still more emphatic words of the inspired philosopher St. Paul, "In him we live, move, and have our being," are to be understood literally, I leave everyone to consider. I say only that our idea of space is, I think, as I have described it, and distinct from our idea of body.[18] Perhaps we consider, in matter itself, the distance between its coherent solid parts, and call it extension with respect to those solid parts. Perhaps we consider it as lying between the extremities of a body in its several dimensions, and call it length, breadth, and thickness. Or perhaps we consider it as lying between any two bodies or positive beings, without regard to whether there is any matter between them or not, and call it distance. However it is named or considered, it is always the same uniform simple idea of space, taken from objects our senses have dealt with. Once we have settled ideas of this in our minds, we can revive and repeat them, and add them to one another as often as we like. And we can consider the space or distance so imagined in either of two ways. We can consider it as filled with solid parts, so that another body cannot come there without displacing and pushing out the body that was there before. Or we can consider it as empty of solidity, so that a body of the same dimensions as that empty or pure space can be placed in it without removing or expelling anything that was there. But to avoid confusion in discussions of this matter, it might perhaps be desirable that the name extension were applied only to matter, or to the distance

18 The quotations are from 1 Kings 8:27 and Acts 17:28.

between the extremities of particular bodies, and the term expansion to space in general, whether or not solid matter occupies it. We would then say that space is expanded and body extended. But everyone is free in this. I propose it only as a clearer and more distinct way of speaking.

2.13.28 *Men differ little in clear simple ideas.*—Knowing precisely what our words stand for would, I imagine, quickly end the dispute in this case, as in a great many others. For I am inclined to think that when people come to examine their simple ideas, they find them generally all in agreement, though in talking with one another they may confuse each other by using different names. I imagine that people who abstract their thoughts and examine the ideas in their own minds carefully cannot differ much in their thinking, however they may tangle themselves up in words according to the ways of speaking of the various schools or sects they were brought up in. Unthinking people, though, do not examine their own ideas scrupulously and carefully. They do not strip their ideas of the marks people use for them, but confuse them with words. Among such people there is bound to be endless dispute, wrangling, and jargon, especially if they are learned, bookish people who are devoted to some sect, used to its language, and have learned to talk by repeating others. But if it should happen that any two thinking people really had different ideas, I do not see how they could talk or argue with each other. Here I must not be misunderstood as thinking that every stray fancy floating in people's brains is automatically one of the sort of ideas I am speaking of. It is not easy for the mind to shed the confused notions and prejudices it has absorbed from custom, carelessness, and ordinary conversation. It takes effort and persistence for the mind to examine its ideas until it resolves them into the clear and distinct simple ones they are compounded of. It also takes effort to see which of its simple ones have, or do not have, a necessary connection with and dependence on one another. Until a person does this with the primary and original notions of things, he builds on

floating and uncertain principles, and will often find himself at a loss.

DURATION

The idea of duration comes from reflecting on the train of ideas passing through the mind.

2.14.1 *Duration is fleeting extension.*—There is another sort of distance or length, the idea of which we get not from the permanent parts of space but from the fleeting and perpetually perishing parts of succession. This we call duration. Its simple modes are any different lengths of it of which we have distinct ideas, such as hours, days, years, and so on, and time and eternity.

2.14.2 *Its idea from reflection on the train of our ideas.*—A great man was once asked what time was, and he answered, "*Si non rogas intelligo*," which amounts to this: the more I set myself to think about it, the less I understand it. That answer might perhaps persuade one that time, which reveals all other things, cannot itself be discovered. Duration, time, and eternity are, not without reason, thought to have something very obscure in their nature. But however remote from our comprehension these may seem, if we trace them correctly to their origins, I have no doubt that one of those sources of all our knowledge, namely,[19] sensation and reflection, will be able to supply us with these ideas as clear and distinct as many others that are thought far less obscure. And we shall find that the idea of eternity itself comes from the same common origin as the rest of our ideas.

2.14.3 To understand time and eternity properly, we should consider attentively what idea we have of duration and how we came by it. Anyone who will simply observe what goes on in his own mind can see that a train of ideas constantly succeed one another in his understanding as long as he is awake. Reflection on these appearances of various ideas, one after another, in our

19 The "great man" is Augustine (*Confessions* 11.14): "If no one asks me, I know; if I want to explain it to someone who asks, I do not know." The Latin as Locke gives it means "If you do not ask, I understand."

minds is what supplies us with the idea of succession. And the distance between any parts of that succession, or between the appearance of any two ideas in our minds, is what we call duration. For while we are thinking, or while we receive several ideas in succession in our minds, we know that we exist. So we measure the existence, or the continuation of the existence, of ourselves or of anything else against the succession of ideas in our minds. That existence, so measured, we call the duration of ourselves or of anything else that coexists with our thinking.

2.14.4 We get our notion of succession and duration from this origin, namely from reflection on the train of ideas we find appearing one after another in our own minds. This seems plain to me from the fact that we have no perception of duration except by considering the train of ideas that take their turns in our understandings. When that succession of ideas stops, our perception of duration stops with it. Everyone clearly experiences this in himself while he sleeps soundly, whether for an hour or a day, a month or a year. Of this duration of things while he sleeps or does not think, he has no perception at all. It is entirely lost to him. The moment at which he stops thinking and the moment he begins to think again seem to him to have no distance between them. And I have no doubt it would be the same for a waking man, if it were possible for him to keep just one idea in his mind, without variation and without others following it. And we see what happens when someone fixes his thoughts very intently on one thing and takes little notice of the succession of ideas passing in his mind. While he is absorbed in that earnest contemplation, he drops a good part of that duration out of his reckoning, and thinks the time shorter than it is. But if sleep commonly joins together distant parts of duration, it is because during that time we have no succession of ideas in our minds. For if a man dreams during his sleep, and a variety of ideas make themselves perceptible in his mind one after another, then during that dreaming he has a sense of duration and of its length. From this it is very clear to me that people get their ideas of duration from reflecting on the train of ideas they

observe succeeding one another in their own understandings. Without that observation they can have no notion of duration, whatever may happen in the world.

2.14.5 *The idea of duration applicable to things while we sleep.*—Indeed, once a man has got the notion or idea of duration from reflecting on the succession and number of his own thoughts, he can apply that notion to things that exist while he is not thinking. In the same way, someone who has got the idea of extension from bodies by sight or touch can apply it to distances where no body is seen or felt. So a man has no perception of the length of duration that passed while he slept or was not thinking. Yet he has observed the revolution of days and nights, and found the length of their duration to be apparently regular and constant. So he can suppose that this revolution went on while he was asleep or not thinking in the same way as it usually does at other times. On that supposition he can, I say, imagine and make allowance for the length of duration while he slept. But suppose Adam and Eve (when they were alone in the world) had spent the whole twenty-four hours in one continuous sleep instead of their ordinary night's sleep. The duration of those twenty-four hours would have been irrecoverably lost to them, and left out forever from their reckoning of time.

2.14.6 *The idea of succession not from motion.*—So it is by reflecting on the appearance of various ideas one after another in our understandings that we get the notion of succession. Someone may think we get it rather from observing motion with our senses. He will perhaps come round to my view when he considers that motion produces an idea of succession in his mind only by producing there a continuous train of distinguishable ideas. For a man looking at a body that is really moving still perceives no motion at all unless that motion produces a constant train of successive ideas. For example: a man becalmed at sea, out of sight of land, on a fine day, may look at the sun, or the sea, or the ship for a whole hour at a stretch and perceive no motion in any of them. Yet it is certain that two, and perhaps all, of them have moved a great way in that time. But as soon as he per-

ceives that one of them has changed its distance from some other body, he perceives that there has been motion. That happens as soon as this motion produces any new idea in him. But wherever a man is, he may have everything around him at rest and perceive no motion at all. If he has been thinking during this hour of quiet, he will perceive the various ideas of his own thoughts appearing one after another in his mind. So he will observe and find succession where he could observe no motion.

2.14.7 And this, I think, is the reason why we do not perceive very slow motions, though they are constant. As they move from one perceptible point toward another, their change of distance is so slow that it produces new ideas in us only at long intervals. Since it does not produce a constant train of new ideas following one another immediately in our minds, we have no perception of motion. For motion consists in a constant succession, and we cannot perceive that succession without a constant succession of changing ideas arising from it.

2.14.8 On the other hand, some things move so fast that they do not affect the senses distinctly with the several distinguishable distances of their motion, and so produce no train of ideas in the mind. These things are not perceived to move either. Suppose something goes round in a circle in less time than our ideas usually take to succeed one another in our minds. It is not perceived to move, but seems to be a perfect, complete circle of that matter or color, and not part of a circle in motion.

2.14.9 *The train of ideas has a certain degree of quickness.*—So I leave it to others to judge whether it is not probable that, while we are awake, our ideas succeed one another in our minds at certain intervals. This would be rather like the images inside a lantern turned round by the heat of a candle. Their appearance in a train may perhaps sometimes be faster and sometimes slower, but I guess it does not vary much in a waking man. There seem to be certain limits to how fast or slow the succession of those ideas in our minds can be. Beyond those limits they can neither slow down nor speed up.

2.14.10 I base this odd conjecture on an observation. In the impressions made on any of our senses, we can perceive succession only up to a certain degree. If it is extremely quick, the sense of succession is lost, even in cases where there is evidently a real succession. Let a cannonball pass through a room and on its way carry off a man's limb or some fleshy part of him. It is as clear as any demonstration can be that it must strike the two sides of the room one after the other. It is also evident that it must touch one part of the flesh first and another afterward, and so on in succession. Yet I believe nobody who ever felt the pain of such a shot, or heard it strike the two distant walls, could perceive any succession in either the pain or the sound of so swift a blow. A part of duration like this, in which we perceive no succession, is what we may call an instant. It takes up the time of only one idea in our minds, without another following it, and so in it we perceive no succession at all.

2.14.11 The same thing happens where the motion is so slow that it does not supply a constant train of fresh ideas to the senses as fast as the mind is capable of receiving new ones. Then other ideas of our own thoughts have room to come into our minds between those offered to our senses by the moving body, and the sense of motion is lost. The body really moves, but it does not change its perceptible distance from other bodies as fast as the ideas in our minds naturally follow one another in their train, and so the thing seems to stand still. This is evident in the hands of clocks, the shadows of sundials, and other constant but slow motions. After certain intervals we perceive from the change of distance that it has moved, but the motion itself we do not perceive.

2.14.12 *This train is the measure of other successions.*—So it seems to me that the constant and regular succession of ideas in a waking man is, so to speak, the measure and standard of all other successions. Suppose some succession outruns the pace of our ideas, as where two sounds or pains, etc., take up in their succession the duration of only one idea. Or suppose some motion or succession is so slow that it does not keep pace with the ideas

in our minds, or with the speed at which they take their turns. This happens when one or more ideas, in their ordinary course, come into our mind between those offered to sight by the different perceptible distances of a moving body, or between sounds or smells that follow one another. In both cases the sense of a constant, continuous succession is lost, and we perceive it only with certain gaps of rest in between.

2.14.13 *The mind cannot fix long on one invariable idea.*—Someone may say that if the ideas in our minds, while we have any there, constantly change and shift in a continual succession, then it would be impossible for a man to think about any one thing for long. This may mean that a man can have one and the same single idea alone in his mind for a long time, without any variation at all. If so, I think that as a matter of fact this is not possible. For this I can give no reason but experience, since I do not know how the ideas of our minds are formed, what materials they are made of, where they get their light, or how they come to make their appearances. And I would have anyone try whether he can keep one single, unvaried idea in his mind, without any other, for any considerable stretch of time.

2.14.14 As a test, let him take any shape, any degree of light or whiteness, or whatever else he likes. He will, I suppose, find it hard to keep all other ideas out of his mind. Instead, other ideas will constantly follow one another in his thoughts, however careful he may be. Some will be ideas of another kind, and some will be various considerations of that idea, each of which considerations is a new idea.

2.14.15 All that is in a man's power here, I think, is to attend to and observe what ideas take their turns in his understanding, or else to direct what sort they are and call in such as he wants or has a use for. But he cannot, I think, prevent the constant succession of fresh ones, though he can usually choose whether to observe and consider them attentively.

2.14.16 *Ideas, however made, include no sense of motion.*—I will not argue here about whether these various ideas in a man's mind are produced by certain motions. But of this I am sure: they

include no idea of motion in their appearance. If a man did not have the idea of motion from some other source, I think he would have none at all. That is enough for my present purpose. It shows sufficiently that we get the idea of succession and duration from noticing the ideas of our own minds appearing there one after another. Without that notice we would have no such ideas at all. It is not motion, then, but the constant train of ideas in our minds while we are awake, that supplies us with the idea of duration. Motion gives us a perception of duration only insofar as it produces a constant succession of ideas in our minds, as I showed before. We get ideas from motion when two bodies change their distance uninterruptedly and perceptibly. But the train of other ideas succeeding one another in our minds, without the idea of any motion, gives us just as clear an idea of succession and duration. So we would have the idea of duration just as well if there were no sense of motion at all.

MEASURES OF TIME

Time is duration measured by regular periodic appearances, such as the revolutions of the sun.

2.14.17 *Time is duration set out by measures.*—Having got the idea of duration in this way, the next natural thing for the mind to do is to get some measure of this common duration. By this measure it can judge its different lengths and consider the distinct order in which various things exist. Without this a great part of our knowledge would be confused, and a great part of history would be made quite useless. We can consider duration as set out by certain periods and marked by certain measures or epochs. This, I think, is what we most properly call time.

2.14.18 *A good measure of time must divide its whole duration into equal periods.*—In measuring extension, all we need to do is apply our standard or measure to the thing whose extension we want to know. But in measuring duration this cannot be done, because no two different parts of succession can be put together to measure each other. Nothing is a measure of duration but dur-

ation, just as nothing is a measure of extension but extension. We can keep by us certain lengths of extension, such as inches, feet, yards, and so on, marked out on permanent pieces of matter. But duration consists in a constant fleeting succession, and so we cannot keep by us any standing, unvarying measure of it. Nothing, then, could serve well as a convenient measure of time except something that has divided the whole length of its duration into apparently equal portions by constantly repeated periods. Portions of duration that are not distinguished and measured by such periods, or considered as so distinguished and measured, do not so properly fall under the notion of time. This appears from phrases like "before all time" and "when time shall be no more."

2.14.19 *The revolutions of the sun and moon, the most proper measures of time.*—The daily and yearly revolutions of the sun have, with reason, been used as the measure of duration. From the beginning of nature they have been constant, regular, and observable by all mankind everywhere, and they are supposed to be equal to one another. But since the distinction of days and years has depended on the motion of the sun, it has brought with it this mistake: people have thought that motion and duration were measures of each other. For in measuring the length of time, people have become accustomed to the ideas of minutes, hours, days, months, years, etc., and they found themselves thinking of these immediately whenever time or duration was mentioned. All these portions of time were measured out by the motion of those heavenly bodies, and so people were apt to confuse time and motion, or at least to think they had a necessary connection with each other. Yet other intervals would have marked off time just as well as the ones that have been used. Any constant periodic appearance or alteration of ideas at seemingly equal intervals of duration would have served, if it were constantly and universally observable. Suppose the sun, which some have taken to be a fire, had been lit at the same interval at which it now comes round to the same meridian every day, and then gone out again about twelve hours later. And suppose that

over the course of a yearly revolution it had noticeably increased in brightness and heat, and then decreased again. Would such regular appearances not serve to measure out the intervals of duration for everyone who could observe them, as well without motion as with it? For if the appearances were constant, universally observable, and at equal intervals, they would serve mankind as measures of time just as well if the motion were taken away.

2.14.20 *Not by their motion, but by their periodic appearances.*—The freezing of water, or the flowering of a plant, recurring at equal intervals in all parts of the earth, would serve people as well to reckon their years by as the motions of the sun. And in fact we see that some peoples in America counted their years by the arrival of certain birds among them in their seasons and their departure at others. A bout of fever, the feeling of hunger or thirst, a smell, a taste, or any other idea would serve the same purpose, if it recurred constantly at equal intervals and made itself noticed by everyone. It would not fail to measure out the course of succession and mark off intervals of time. Thus we see that people born blind keep count of time well enough by years, though they cannot tell the revolutions of years by motions they do not perceive. Suppose a blind man marked off his years by the heat of summer or the cold of winter, or by the smell of some spring flower or the taste of some autumn fruit. I ask whether he would not have a better measure of time than the Romans had before Julius Caesar reformed their calendar. I ask the same about many other peoples, whose years are very irregular despite the motion of the sun they claim to use.[20] It adds no small difficulty to chronology that we can hardly determine the exact lengths of the years various nations counted by. They differ greatly from one another, and all of them, I think I may say, differ from the precise motion of the sun. A recent ingenious

20 Julius Caesar's reform of 46 BC replaced the irregular Roman lunar-based calendar with the solar Julian calendar.

author supposes[21] that from the creation to the flood the sun moved constantly in the equator. On this view it spread its light and heat equally over all the habitable parts of the earth, in days all of the same length, without its yearly swings toward the tropics. If so, I do not think it very easy to imagine people in the world before the flood counting by years from the beginning, despite the motion of the sun. Nor is it easy to imagine them measuring their time by periods that had no very obvious perceptible marks to distinguish them.

2.14.21 *No two parts of duration can be certainly known to be equal.* —But perhaps it will be said: without a regular motion, such as the sun's or some other, how could anyone ever know that such periods were equal? I answer that the equality of any other recurring appearances could be known in the same way that the equality of days was known, or presumed, at first. People only judged the days by the train of ideas that had passed in their minds during the intervals. By that train of ideas they found inequality in natural days but none in artificial days. So they guessed that the artificial days, or νυχθήμερα, were equal, and that was enough to let them serve as a measure. More exact investigation has since found inequality in the daily revolutions of the sun, however, and we do not know whether the yearly ones are not unequal too.[22] Still, because we presume them equal and they appear equal, these serve as well to reckon time by as if they could be proved to be exactly equal, though they do not measure the parts of duration exactly. We must therefore carefully distinguish between duration itself and the measures we use to judge its length. Duration in itself is to be considered as going on in one constant, equal, uniform course. But none of the measures of it that we use can be known to do so, nor can we be sure that their assigned parts or periods are equal in duration

21 LOCKE'S NOTE. Dr. Burnet's *Theory of the Earth*.

TRANSLATOR'S NOTE. Thomas Burnet (c. 1635–1715), *The Sacred Theory of the Earth* (Latin 1681, English 1684), argued that the earth before the flood had no seasons.

22 Greek *nychthēmera*, "night-days": full twenty-four-hour periods. Locke's "natural days" here are the varying stretches of daylight.

to one another. For two successive lengths of duration, however they are measured, can never be demonstrated to be equal. The world used the motion of the sun for a long time, and with great confidence, as an exact measure of duration. Yet, as I said, it has been found unequal in its various parts. People have lately made use of a pendulum, as a steadier and more regular motion than that of the sun (or, to speak more truly, of the earth). Yet suppose someone were asked how he knows for certain that two successive swings of a pendulum are equal. It would be very hard to convince him that they are infallibly so, since we cannot be sure that the cause of that motion, which is unknown to us, will always operate equally. And we are sure that the medium the pendulum moves in is not always the same. If either of these varies, it may alter the equality of such periods. That would destroy the certainty and exactness of measurement by motion, just as with any periods of other appearances. The notion of duration still remains clear, even though none of our measures of it can be demonstrated to be exact. Since, then, no two portions of succession can be brought together, it is impossible ever to know for certain that they are equal. All we can do for a measure of time is to take things that have continual successive appearances at seemingly equal intervals. And we have only one measure of that seeming equality: what the train of our own ideas has lodged in our memories. This, together with other probable reasons, persuades us that they are equal.

2.14.22 *Time not the measure of motion.*—One thing seems strange to me. Everyone plainly measured time by the motion of the great, visible bodies of the world, and yet time should be defined as "the measure of motion." Anyone who reflects even a little can see that in measuring motion, space must be considered just as much as time. And those who look a little further will also find something else. Anyone who wants to estimate or measure motion so as to judge it correctly must take the bulk of the thing moved into the calculation.[23] Nor does motion in fact

23 The definition goes back to Aristotle (*Physics* 4.11–12), who called time "the number" or "measure" of motion; it was standard in the schools.

help to measure duration in any other way than by constantly bringing about the return of certain perceptible ideas at seemingly equal intervals. Suppose the motion of the sun were as unequal as that of a ship driven by unsteady winds, sometimes very slow and at other times irregularly very fast. Or suppose it were constantly equally fast but not circular, and did not produce the same appearances. Then it would not help us at all to measure time, any more than the seemingly unequal motion of a comet does.

2.14.23 *Minutes, hours, days, and years, not necessary measures of duration.*—Minutes, hours, days, and years, then, are no more necessary to time or duration than inches, feet, yards, and miles marked out on some material are to extension. We in this part of the universe use them constantly as periods marked off by the revolutions of the sun, or as known parts of such periods. By this constant use we have fixed the ideas of such lengths of duration in our minds, and we apply them to all parts of time whose length we want to consider. Yet there may be other parts of the universe where they no more use these measures of ours than people in Japan use our inches, feet, or miles. But something analogous to them there must be. For without some regular periodic returns we could not measure for ourselves, or indicate to others, the length of any duration. This would hold even if the world were as full of motion as it is now, as long as no part of it was arranged into regular and apparently equal revolutions. But the different measures that may be used for reckoning time do not alter in the least the notion of duration, which is the thing to be measured. People use the different standards of a foot and a cubit, and these no more alter the notion of extension for them.

2.14.24 *Our measure of time applicable to duration before time.*—Once the mind has got such a measure of time as the yearly revolution of the sun, it can apply that measure to duration in which that measure itself did not exist, and with which, in its actual being, it had nothing to do. Suppose someone says that Abraham was born in the two thousand seven hundred and twelfth year of the Julian period. That is just as intelligible as

reckoning from the beginning of the world, even though that far back there was no motion of the sun, nor any motion at all.[24] The Julian period is supposed to begin several hundred years before there actually were any days, nights, or years marked out by revolutions of the sun. Yet we still reckon correctly, and so measure durations just as well, as if the sun had really existed at that time and kept the same ordinary motion it has now. We can take the idea of a foot or a yard from bodies here and apply it in our thoughts to distances beyond the bounds of the world, where there are no bodies at all. Just as easily, we can apply in our thoughts the idea of a duration equal to one yearly revolution of the sun to duration where there was no sun and no motion.

2.14.25 Suppose it were five thousand six hundred and thirty-nine miles, or millions of miles, from here to the most remote body in the universe. Since the universe is finite, that body must be at some definite distance. And suppose, as we do, that it is five thousand six hundred and thirty-nine years from now back to the first existence of any body at the beginning of the world. We can, in our thoughts, apply this measure of a year to duration before the creation, or beyond the duration of bodies or motion. In the same way we can apply this measure of a mile to space beyond the outermost bodies. So by the one measure we can measure duration where there was no motion, just as by the other we can measure space in our thoughts where there is no body.

2.14.26 It may be objected here that in this way of explaining time I have taken for granted what I should not, namely that the world is neither eternal nor infinite. I answer that for my present purpose it is not necessary at this point to use arguments to prove that the world is finite in both duration and extension. But since this is at least as conceivable as the contrary, I certainly have the liberty to suppose it, just as anyone

24 The Julian period, devised by Joseph Scaliger (1583), is a 7,980-year chronological cycle whose starting point (4713 BC) falls before the commonly assumed date of creation.

has the liberty to suppose the contrary. And I have no doubt that anyone who tries can easily conceive in his mind the beginning of motion, though not of all duration. So he can come to a stop, a non ultra ("no further"), in his consideration of motion. In the same way he can set limits in his thoughts to body and the extension belonging to it, but not to space where there is no body. The utmost bounds of space and duration are beyond the reach of thought, just as the utmost bounds of number are beyond the widest grasp of the mind. All this is for the same reason, as we shall see in another place.

ETERNITY

By repeating measures of time without end, the mind comes to the idea of eternity.

2.14.27 *Eternity.*—By the same means, then, and from the same origin by which we come to have the idea of time, we also have the idea we call eternity. It happens like this: having gotten the idea of succession and duration by reflecting on the train of our own ideas, which are caused in us either by those ideas naturally appearing and coming constantly of their own accord into our waking thoughts, or by external objects affecting our senses one after another; and having gotten from the revolutions of the sun the ideas of certain lengths of duration, we can in our thoughts add such lengths of duration to one another as often as we please, and apply them, so added, to durations past or to come. We can go on doing this without bounds or limits, proceeding to infinity. In this way we can apply the length of the sun's annual motion to duration supposed to have existed before the sun's motion, or any other motion, came into being. This is no more difficult or absurd than to apply the notion I have of a shadow moving for one hour today on the sundial to the duration of something last night—for example, the burning of a candle, which is now completely separate from all actual motion. It is as impossible for the duration of that flame for an hour last night to coexist with any motion that exists now, or ever will, as it is

for any part of the duration that came before the beginning of the world to coexist with the sun's present motion. But this does not stop me. Having the idea of the length of the shadow's motion on a dial between the marks of two hours, I can measure in my thoughts the duration of that candlelight last night as distinctly as I can the duration of anything that exists now. It is no more than to think that, had the sun shone on the dial then and moved at the same rate it does now, the shadow on the dial would have passed from one hour line to the next while that candle flame lasted.

2.14.28 The notion of an hour, a day, or a year is only the idea I have of the length of certain regular periodic motions. None of these motions ever exists all at once, except in the ideas of them I have in my memory, derived from my senses or reflection. So I can, with the same ease and for the same reason, apply that notion in my thoughts to duration before every kind of motion, just as well as to anything that is only a minute or a day before the motion the sun is in at this very moment. All past things are equally and completely at rest, and for this way of considering them it makes no difference whether they were before the beginning of the world or only yesterday. Measuring any duration by some motion does not depend at all on that thing really coexisting with that motion, or with any other periods of revolution. It depends only on my having in my mind a clear idea of the length of some known periodic motion, or of other intervals of duration, and applying that to the duration of the thing I want to measure.

2.14.29 Hence we see that some people imagine the duration of the world, from its first existence to this present year 1689, to have been five thousand six hundred and thirty-nine years, or equal to five thousand six hundred and thirty-nine annual revolutions of the sun. Others imagine it a great deal longer: for example, the ancient Egyptians, who in the time of Alexander counted twenty-three thousand years from the reign of the sun, and the Chinese today, who reckon the world to be three million two hundred and sixty-nine thousand years old or more. I would

not believe that this longer duration of the world, by their computation, is true. Still, I can imagine it just as they do, and I can understand as truly, and say, that the one is longer than the other, as I understand that Methuselah's life was longer than Enoch's.[25] And suppose the common reckoning of five thousand six hundred and thirty-nine years is true (as it may be, as well as any other that has been proposed). That does not at all prevent me from imagining what others mean when they make the world a thousand years older. For anyone can as easily imagine (I do not say believe) the world to be fifty thousand years old as five thousand six hundred and thirty-nine, and can as well conceive a duration of fifty thousand years as one of five thousand six hundred and thirty-nine. This shows that to measure the duration of anything by time, that thing does not need to coexist with the motion we measure by, or with any other periodic revolution. It is enough for this purpose that we have the idea of the length of some regular periodic appearances. We can then, in our minds, apply that idea to a duration with which the motion or appearance never coexisted.

2.14.30 Take the history of the creation given by Moses. I can imagine that light existed three days before the sun existed or had any motion, simply by thinking that the duration of light before the sun was created was as long as three of the sun's daily revolutions would have been (if the sun had moved then as it does now). In the same way I can have an idea of the chaos, or of angels, being created a minute, an hour, a day, a year, or a thousand years before there was either light or any continuous motion.[26] For if I can just consider a duration equal to one minute before either the existence or the motion of any body, I can add one minute more until I reach sixty. By the same way of adding minutes, hours, or years (that is, such and such parts of the sun's revolutions, or any other period I have the idea of), I

25 The figure of 5,639 years comes from biblical chronology. In Genesis 5 Methuselah lives 969 years and Enoch 365.

26 In Genesis 1 light is created on the first day and the sun on the fourth. Moses was traditionally held to be the author of Genesis.

can proceed to infinity. I can suppose a duration exceeding as many such periods as I can count, however long I go on adding. This, I think, is the notion we have of eternity. Of its infinity we have no other notion than we have of the infinity of number, to which we can add forever without end.

2.14.31 And so I think it is plain that we get ideas of duration, and of its measures, from those two fountains of all knowledge mentioned before, namely reflection and sensation.

For, first, by observing what passes in our minds—how, in the train of our ideas there, some constantly vanish and others begin to appear—we come by the idea of succession.

Second, by observing a distance between the parts of this succession, we get the idea of duration.

Third, by observing through sensation certain appearances at certain regular and seemingly equally spaced periods, we get the ideas of certain lengths or measures of duration, such as minutes, hours, days, years, and so on.

Fourth, we can repeat those measures of time, or ideas of a fixed length of duration, in our minds as often as we like. By doing so we can come to imagine duration where nothing really lasts or exists; and in this way we imagine tomorrow, next year, or seven years from now.

Fifth, we can repeat ideas of any length of time, such as a minute, a year, or an age, in our own thoughts as often as we like. We can add them to one another without ever getting any nearer to the end of such addition than we can to the end of number, to which we can always add. In this way we come by the idea of eternity: both the future eternal duration of our souls and the eternity of that infinite Being which must necessarily have always existed.

Sixth, by considering any part of infinite duration as marked off by periodic measures, we come by the idea of what we call time in general.

DURATION AND EXPANSION COMPARED

Space and time are both boundless, but duration is like a line and expansion like a solid.

2.15.1 *Both capable of greater and less.*—In the preceding chapters we have dwelt at some length on space and duration. But they are ideas of general importance, with something very abstruse and peculiar in their nature, so comparing them with each other may help to illustrate them. We may get a clearer and more distinct conception of them by looking at them together. To avoid confusion, I call distance or space, in its simple abstract conception, expansion. This distinguishes it from extension, which some people use to express this distance only as it is in the solid parts of matter, so that it includes, or at least suggests, the idea of body. The idea of pure distance includes nothing of the kind. I also prefer the word expansion to space, because space is often applied to the distance between fleeting successive parts, which never exist together, as well as to the distance between parts that are permanent. In both of these (namely, expansion and duration) the mind has this common idea of continuous lengths, capable of greater or smaller quantities. A man has as clear an idea of the difference in length between an hour and a day as between an inch and a foot.

2.15.2 *Expansion not bounded by matter.*—Once the mind has the idea of the length of any part of expansion (a span, a pace, or whatever length you like), it can, as has been said, repeat that idea. By adding it to the first, the mind can enlarge its idea of length and make it equal to two spans or two paces. It can go on doing this as often as it wants, until the length equals the distance between any parts of the earth, and it can keep increasing it until it reaches the distance of the sun or of the most remote star. By such a progression, starting from where it is or from any other place, the mind can go on and pass beyond all those lengths, and find nothing to stop it from going on, either within body or outside it. It is true that in our thoughts we can easily

come to the end of solid extension; we have no difficulty reaching the extremity and bounds of all body. But when the mind is there, it finds nothing to stop its progress into this endless expansion; of that it can neither find nor conceive any end. And let no one say that beyond the bounds of body there is nothing at all, unless he means to confine God within the limits of matter. Solomon, whose understanding was filled and enlarged with wisdom, seems to have thought otherwise when he says, "heaven, and the heaven of heavens, cannot contain thee." And I think a man greatly overrates the capacity of his own understanding if he persuades himself that he can extend his thoughts farther than God exists, or imagine any expansion where God is not.

2.15.3 *Nor duration by motion.*—It is just the same with duration. Once the mind has the idea of any length of duration, it can double, multiply, and enlarge it. It can take it not only beyond the mind's own existence but beyond the existence of all bodily beings, and beyond all the measures of time taken from the great bodies of the world and their motions. Yet everyone readily admits that although we make duration boundless, as it certainly is, we still cannot extend it beyond all being. Everyone readily allows that God fills eternity, and it is hard to find a reason why anyone should doubt that he likewise fills immensity. His infinite being is certainly as boundless in the one way as in the other. It seems to me that saying "where there is no body, there is nothing" gives a little too much to matter.

2.15.4 *Why men more easily admit infinite duration than infinite expansion.*—From this, I think, we can learn why everyone speaks of eternity familiarly, takes it for granted without the least hesitation, and does not scruple to ascribe infinity to duration, while many admit or suppose the infinity of space only with more doubt and reserve. The reason for this seems to me to be as follows. Duration and extension are used as names of properties belonging to other beings. We easily conceive infinite duration in God, and we cannot help doing so. But we attribute extension not to him but only to matter, which is finite, so we

are more inclined to doubt that expansion exists without matter, since we commonly suppose it to be an attribute of matter alone. And so when men follow out their thoughts about space, they tend to stop at the borders of body, as if space ended there too and reached no farther. Or if, on reflection, their ideas carry them farther, they still call what lies beyond the limits of the universe imaginary space, as if it were nothing because no body exists in it. Yet they never call duration imaginary when it comes before all body and before the motions by which it is measured, because it is never supposed to be empty of some other real existence. The names of things may to some extent guide our thoughts toward the origins of men's ideas, and I am inclined to think they can do so very much. If so, the name duration may give us reason to think that two things were once thought to have some analogy. The first is the continuation of existence, with a kind of resistance to any destructive force. The second is the continuation of solidity, which is easily confused with hardness and, if we look into the minute anatomical parts of matter, differs little from it. This analogy gave rise to words as closely related as *durare* and *durum esse*. That *durare* is applied to the idea of hardness as well as to that of existence we see in Horace, Epode 16:[27] "*ferro duravit secula*." But however that may be, this much is certain: whoever follows his own thoughts will find them sometimes launch out beyond the extent of body into the infinity of space or expansion. The idea of this is distinct and separate from body and from all other things, and for those who wish, it may be a subject for further meditation.[28]

2.15.5 *Time to duration is as place to expansion.*—Time in general is to duration as place is to expansion. They are the portions of those boundless oceans of eternity and immensity that are marked out and distinguished from the rest, as if by landmarks. So they are used to indicate the position of finite real beings in relation to one another within those uniform infinite oceans of

27 Latin *durare*, "to last" (also "to harden"); *durum esse*, "to be hard."
28 "He hardened the ages with iron": Horace, *Epodes* 16.65, on Jupiter bringing in the Iron Age.

duration and space. Rightly considered, they are only ideas of definite distances from certain known points. These points are fixed in distinguishable sensible things, which are supposed to keep the same distance from one another. We reckon from such points fixed in sensible beings, and from them we measure our portions of those infinite quantities. These portions, so considered, are what we call time and place. For duration and space are in themselves uniform and boundless. Without such known, settled points, the order and position of things would be lost in them, and everything would lie jumbled together in hopeless confusion.

2.15.6 *Time and place are taken for as much of either as is marked out by the existence and motion of bodies.*—Time and place can be taken in this way, for definite, distinguishable portions of those infinite abysses of space and duration, marked off from the rest (or supposed to be) by marks and known boundaries. Taken so, each of them has a twofold meaning.

First, time in general is commonly taken for as much of infinite duration as is measured by, and coexists with, the existence and motions of the great bodies of the universe, so far as we know anything about them. In this sense time begins and ends with the structure of this sensible world, as in the phrases mentioned before, "before all time" or "when time shall be no more." Likewise place is sometimes taken for that portion of infinite space which is occupied and enclosed by the material world, and is thereby distinguished from the rest of expansion. This, though, might more properly be called extension than place. The particular time or duration, and the particular extension and place, of all bodily beings are confined within these two, and are measured and determined by their observable parts.

2.15.7 *Sometimes for as much of either as we designate by measures taken from the bulk or motion of bodies.*—Second, the word time is sometimes used in a broader sense. It is applied to those parts of infinite duration that were really distinguished and measured out by the real existence and periodic motions of bodies, which were appointed from the beginning to be for signs, and for sea-

sons, and for days, and years, and are accordingly our measure of time. But it is applied also to other portions of that infinite uniform duration which, on any occasion, we suppose equal to certain lengths of measured time, and so consider as bounded and determined.[29] Suppose, for instance, that the creation or fall of the angels took place at the beginning of the Julian period. We would then speak properly enough, and be understood, if we said that more time has passed since the creation of the angels than since the creation of the world, by seven thousand six hundred and forty years. By this we would mark out as much of that undifferentiated duration as we suppose equal to, and as would have allowed, seven thousand six hundred and forty annual revolutions of the sun, moving at the rate it now does. In the same way we sometimes speak of place, distance, or bulk in the great void beyond the borders of the world. We do so when we consider as much of that space as is equal to, or capable of receiving, a body of some given dimensions, such as a cubic foot, or when we suppose a point in it at some particular distance from some part of the universe.

2.15.8 *They belong to all beings.*—Where and when are questions that belong to all finite existences. We always reckon them from some known parts of this sensible world, and from certain epochs marked out for us by the motions observable in it. Without some such fixed parts or periods, the order of things would be lost to our finite understandings in the boundless, unvarying oceans of duration and expansion. These oceans contain within them all finite beings, and in their full extent they belong only to the Deity. So we should not be surprised that we do not comprehend them, or that our thoughts are so often at a loss when we try to consider them, either abstractly in themselves or as in any way attributed to the first, incomprehensible being. But when they are applied to particular finite beings, the extension of any body is as much of that infinite space as the bulk of the body takes up, and place is the position of any body considered as at a certain distance from some other body. The

29 The phrase echoes Genesis 1:14.

idea of the particular duration of anything is an idea of that portion of infinite duration which passed during the existence of that thing. In the same way, the time when the thing existed is the idea of the stretch of duration that passed between some known, fixed period of duration and the existence of that thing. The one shows the distance between the extremities of the bulk or existence of the same thing: for example, that it is a foot square, or lasted two years. The other shows its distance in place or existence from other fixed points of space or duration: for example, that it was in the middle of Lincoln's Inn Fields, or in the first degree of Taurus, and in the year of our Lord 1671, or the 1000th year of the Julian period. We measure all these distances by preconceived ideas of certain lengths of space and duration. In the one case these are inches, feet, miles, and degrees; in the other, minutes, days, and years.[30]

2.15.9 *All the parts of extension are extension; and all the parts of duration are duration.*—There is one more respect in which space and duration closely resemble each other. They are rightly counted among our simple ideas, and yet none of the distinct ideas we have of either is entirely without composition, because it is the very nature of both to consist of parts. But their parts are all of the same kind, with no admixture of any other idea, so this does not keep them from having a place among simple ideas. Suppose the mind could reach, as it does in number, a part of extension or duration so small that it ruled out divisibility. That would be, as it were, the indivisible unit or idea, and by repeating it the mind would make its larger ideas of extension and duration. But the mind cannot frame an idea of any space without parts. Instead, it uses the common measures which, through familiar use in each country, have imprinted themselves on the memory: inches and feet, or cubits and parasangs, and likewise seconds, minutes, hours, days, and years in duration. The mind uses such ideas as these, I say, as simple ones. They are the component parts of larger ideas, which the mind makes when

30 Lincoln's Inn Fields is a large square in London. "The first degree of Taurus" is a position on the zodiac used in astronomical reckoning.

needed by adding together such known lengths as it is acquainted with. On the other hand, when the mind would divide them into smaller fractions, it treats the smallest ordinary measure we have of either as a unit in number. Yet on both sides, in addition and in division, of space or of duration, something happens when the idea under consideration becomes very large or very small. Its precise size becomes very obscure and confused, and only the number of its repeated additions or divisions remains clear and distinct. Anyone who lets his thoughts loose in the vast expansion of space or in the divisibility of matter will easily see this. Every part of duration is duration too, and every part of extension is extension, and both are capable of addition or division to infinity. But the smallest portions of either of which we have clear and distinct ideas may perhaps be the fittest for us to consider as the simple ideas of that kind. Our complex modes of space, extension, and duration are made up of them, and can again be distinctly resolved into them. Such a small part of duration may be called a moment. It is the time taken by one idea in our minds, in the train of their ordinary succession there. The other has no proper name. I do not know whether I may be allowed to call it a sensible point, meaning by this the smallest particle of matter or space we can discern. Ordinarily this is about one minute of a circle with the eye at its center, and for the sharpest eyes seldom less than thirty seconds.

2.15.10 *Their parts inseparable.*—Expansion and duration agree in this further respect. We consider both of them as having parts, yet their parts cannot be separated from one another, not even in thought. This is so even though the things from which we take our measures can be interrupted and separated. We measure the one by the parts of bodies, and these are often interrupted by rest. We measure the other by the parts of motion, or rather by the succession of ideas in our minds, and this is interrupted by sleep, which we also call rest.

2.15.11 *Duration is like a line, expansion like a solid.*—But there is this obvious difference between them. The ideas of length we have of expansion are turned in every direction, and so make

figure, breadth, and thickness. Duration, by contrast, is only, as it were, the length of one straight line extended to infinity, not capable of multiplicity, variation, or figure. It is one common measure of all existence whatever, in which all things share equally while they exist. For this present moment is common to all things now in existence, and it takes in that part of their existence equally, just as if they were all one single being. We may truly say that they all exist in the same moment of time. Whether angels and spirits have anything analogous to this with respect to expansion is beyond my comprehension. Our understandings and comprehension are suited to our own preservation and the purposes of our own being, but not to the reality and extent of all other beings. So perhaps, for us, it is nearly as hard to conceive any existence, or to have an idea of any real being, with a complete negation of every kind of expansion, as it is to have the idea of any real existence with a complete negation of every kind of duration. And so we do not know what spirits have to do with space, or how they share in it. All we know is that each body individually occupies its own portion of space, according to the extent of its solid parts. It thereby excludes all other bodies from having any share in that particular portion of space while it remains there.

2.15.12 *Duration never has two parts together; expansion has all together.*—Duration, and time, which is a part of it, is the idea we have of perishing distance. No two parts of it exist together; they follow each other in succession. Expansion, by contrast, is the idea of lasting distance: all its parts exist together and are not capable of succession. So we cannot conceive any duration without succession. Nor can we put it together in our thoughts that any being exists now tomorrow, or possesses more than the present moment of duration at once. Even so, we can conceive the eternal duration of the Almighty as very different from that of man or any other finite being. For man does not take in all past and future things in his knowledge or power. His thoughts are but of yesterday, and he does not know what tomorrow will bring forth. What has once passed he can never recall, and what

is still to come he cannot make present. What I say of man I say of all finite beings. They may far exceed man in knowledge and power, and yet in comparison with God himself they are no more than the lowest creature. The finite, of whatever magnitude, bears no proportion to the infinite. God's infinite duration is accompanied by infinite knowledge and infinite power, so he sees all things past and to come. They are no more distant from his knowledge, and no farther removed from his sight, than the present. They all lie within the same view, and there is nothing he cannot make exist at any moment he pleases. For the existence of all things depends on his good pleasure, so all things exist every moment that he thinks fit to have them exist. To conclude: expansion and duration mutually embrace and contain each other, every part of space being in every part of duration, and every part of duration in every part of expansion. I think such a combination of two distinct ideas is hardly to be found anywhere else in all the great variety of things we do or can conceive, and it may provide material for further speculation.

NUMBER

Number, made by adding units, is the most universal idea, and counting depends on having names.

2.16.1 *Number the simplest and most universal idea.*—Among all the ideas we have, none is suggested to the mind in more ways than that of unity, or one, and none is simpler. It has no shadow of variety or composition in it. Every object our senses deal with, every idea in our understandings, every thought of our minds brings this idea along with it. So it is the most intimate to our thoughts, and also, in its agreement with all other things, the most universal idea we have. For number applies to men, angels, actions, thoughts, and everything that either exists or can be imagined.

2.16.2 *Its modes made by addition.*—By repeating this idea in our minds and adding the repetitions together, we come by the com-

plex ideas of its modes. Thus by adding one to one we have the complex idea of a couple, and by putting twelve units together we have the complex idea of a dozen. It is the same with a score, or a million, or any other number.

2.16.3 *Each mode distinct.*—The simple modes of number are the most distinct of all. The slightest variation, which is a unit, makes each combination as clearly different from the one nearest to it as from the most remote. Two is as distinct from one as two hundred is, and the idea of two is as distinct from the idea of three as the size of the whole earth is from that of a mite. This is not so in other simple modes. There it is not so easy, and perhaps not possible, for us to distinguish between two neighboring ideas, even though they are really different. For who will undertake to find a difference between the white of this paper and the shade of white next to it? Or who can form distinct ideas of every slightest excess in extension?

2.16.4 *Therefore demonstration in numbers the most precise.*—Each mode of number is clear and distinct from all others, even those nearest to it. This inclines me to think that demonstrations in numbers, if they are not more evident and exact than those in extension, are at least more general in their use and more determinate in their application. For the ideas of numbers are more precise and distinguishable than those in extension. In extension not every equality and excess is so easy to observe or measure, because in space our thoughts cannot arrive at a definite smallness, like a unit, beyond which they cannot go. So the quantity or proportion of the slightest excess cannot be discovered. It is clearly otherwise in number, where, as has been said, ninety-one is as distinguishable from ninety as from nine thousand, even though ninety-one is the very next step above ninety. But it is not so in extension. There anything just over a foot or an inch cannot be distinguished from the standard foot or inch. Of two lines that appear equal in length, one may be longer than the other by innumerable parts. Nor can anyone name an angle that is the next largest after a right angle.

2.16.5 *Names necessary to numbers.*—By repeating the idea of a unit, as has been said, and joining it to another unit, we make of them one collective idea, marked by the name two. Whoever can do this can keep going, adding one more to the collective idea he had of any number and giving it a name. He can then count, or have ideas of different collections of units distinguished from one another, as far as he has a series of names for the succeeding numbers and a memory to retain that series with its various names. For all counting is simply adding one more unit to more. We then give the whole, taken together as one idea, a new or distinct name or sign, by which to know it from those before and after it and to distinguish it from every smaller or larger multitude of units. So a man may add one to one, and then to two, and go on with his count, always taking with him the distinct names belonging to each step. He may also go back again and make the collections smaller, by subtracting a unit from each. Such a man is capable of all the ideas of numbers within the range of his language, or for which he has names, though perhaps not of more. For the various simple modes of number are in our minds only so many combinations of units. These have no variety and are capable of no other difference than more or less. So names or marks for each distinct combination seem more necessary here than for any other sort of ideas. Without such names or marks we can hardly make good use of numbers in reckoning, especially where the combination is made up of a large multitude of units. If they are put together without a name or mark to distinguish that precise collection, they can hardly be kept from becoming a confused heap.

2.16.6 This, I think, is the reason why some Native Americans I have spoken with could not by any means count to a thousand as we do, nor had any distinct idea of that number, though they could count very well to twenty. They were otherwise quick and rational enough. But their language was sparse, adapted only to the few necessities of a simple life of scarcity, with no acquaintance with trade or mathematics, and it had no word for a thousand. So when people talked with them about those large num-

bers, they would point to the hairs of their head to express a great multitude they could not count. This inability, I suppose, came from their lack of names. The Tupinambá had no names for numbers above five; any number beyond that they made up by showing their fingers and the fingers of others who were present[31]. And I have no doubt that we ourselves could count distinctly in words a great deal farther than we usually do, if only we would find some suitable names to signify the numbers by. As things are, we name them by millions of millions of millions and so on, and in that way it is hard to go beyond eighteen, or at most twenty-four, decimal places without confusion. But to show how much distinct names help us to reckon well, or to have useful ideas of numbers, let us set all the following figures in one continuous line, as the marks of a single number. For example:

Nonillions. 857324
Octillions. 162486
Septillions. 345896
Sextillions. 437918
Quintillions. 423147
Quatrillions. 248106
Trillions. 235421
Billions. 261734
Millions. 368149
Units. 623137[32]

The ordinary way of naming this number in English would be to repeat over and over "millions, of millions, of millions, of millions, of millions, of millions, of millions, of millions" (millions being the name for the second group of six figures). In this way it will be very hard to have any distinguishing notion of this number. Suppose instead we gave every group of six figures a new and orderly name. Then these figures, and perhaps a great

31 LOCKE'S NOTE. Jean de Léry, *Histoire d'un voyage fait en la terre du Brésil* (*History of a Voyage to the Land of Brazil*), ch. 20. 307/382

32 Locke uses the old "long scale," in which each new name marks a further six digits, so that a billion is a million millions.

many more in sequence, might easily be counted distinctly, and we might both get ideas of them more easily for ourselves and convey them more plainly to others. Whether this is so, I leave to be considered. I mention this only to show how necessary distinct names are to counting, without pretending to introduce new ones of my own invention.

2.16.7 *Why children do not count earlier.*—So children do not begin to count very early, nor go very far or steadily in it, until a good while after they are well stocked with plenty of other ideas. This is either because they lack names to mark the successive steps of numbers, or because they do not yet have the faculty of collecting scattered ideas into complex ones, arranging them in a regular order, and keeping them in memory, as counting requires. One can often see them talk and reason fairly well, and have very clear conceptions of various other things, before they can count to twenty. And some people, through a weakness of memory, cannot retain the various combinations of numbers with their names attached in their distinct order, or the dependence of so long a train of numerical steps and their relation to one another. These people are not able, their whole life long, to count or regularly go through any moderate series of numbers. For anyone who wants to count to twenty, or to have any idea of that number, must know that nineteen came before it, with the distinct name or sign of every one of them as they stand marked in their order. Wherever this fails, a gap is made, the chain breaks, and progress in counting can go no further. So to count correctly, it is required, 1. That the mind carefully distinguish two ideas that differ from one another only by the addition or subtraction of one unit. 2. That it retain in memory the names or marks of the various combinations, from one unit up to that number—and not confusedly and at random, but in the exact order in which the numbers follow one another. If it trips in either of these, the whole business of counting will be disturbed. Only the confused idea of multitude will remain, and the ideas necessary to distinct numbering will not be reached.

2.16.8 *Number measures everything measurable.*—A further thing to observe about number is that it is what the mind uses in measuring all the things we can measure, which are chiefly expansion and duration. And our idea of infinity, even when applied to these, seems to be nothing but the infinity of number. For what else are our ideas of eternity and immensity but repeated additions of certain ideas of imagined parts of duration and expansion, together with the infinity of number, in which we can never come to an end of adding? Of all our ideas, number most clearly supplies us with such an inexhaustible stock, as is obvious to everyone. Let a man gather into one sum as great a number as he likes. This multitude, however great, does not lessen one bit the power of adding to it, or bring him any nearer the end of the inexhaustible stock of number, where there still remains as much to be added as if none had been taken out. And this endless addition or addibility (if anyone prefers the word) of numbers, so evident to the mind, is what I think gives us the clearest and most distinct idea of infinity—of which more in the following chapter.

INFINITY

The idea of infinity comes from our endless power of adding to space, duration and number.

2.17.1 *Infinity, in its original meaning, is attributed to space, duration, and number.*—Anyone who wants to know what kind of idea it is to which we give the name infinity cannot do better than to consider what the mind most directly attributes infinity to, and then how the mind comes to form it.

Finite and infinite seem to me to be regarded by the mind as modes of quantity, and in their first meaning to be attributed primarily only to things that have parts and can be increased or diminished by adding or subtracting even the smallest part. Such are the ideas of space, duration, and number, which we considered in the preceding chapters. It is true that we cannot help being assured that the great God, of whom and from whom

are all things, is incomprehensibly infinite. But when, in our weak and narrow thoughts, we apply our idea of infinite to that first and supreme Being, we do so primarily with respect to his duration and his being everywhere; and, I think, more figuratively to his power, wisdom, goodness, and other attributes, which are properly inexhaustible and incomprehensible, and so on. For when we call these infinite, the only idea we have of this infinity is one that carries with it some reflection on, and hint of, the number or extent of the acts or objects of God's power, wisdom, and goodness. These can never be supposed so great or so many that his attributes will not always surpass and exceed them, however far we multiply them in our thoughts, with all the infinity of endless number. I do not claim to say how these attributes are in God, who is infinitely beyond the reach of our narrow capacities. They undoubtedly contain in them every possible perfection. But this, I say, is our way of conceiving them, and these are our ideas of their infinity.

2.17.2 *The idea of finite is easily found.*—Since the mind, then, regards finite and infinite as modifications of expansion and duration, the next thing to consider is how the mind comes by them. As for the idea of finite, there is no great difficulty. The obvious portions of extension that affect our senses bring the idea of finite into the mind with them; and the ordinary periods of succession by which we measure time and duration, such as hours, days, and years, are bounded lengths. The difficulty is how we come by those boundless ideas of eternity and immensity, since the objects we deal with fall so far short of any approach or proportion to that vastness.

2.17.3 *How we come by the idea of infinity.*—Anyone who has an idea of some fixed length of space, such as a foot, finds that he can repeat that idea, and by joining it to the first, make the idea of two feet; by adding a third, three feet; and so on, without ever coming to an end of his addition. This holds whether he adds the same idea of a foot, or, if he likes, doubles it, or any other idea he has of a length, such as a mile, or the diameter of the earth, or of the *orbis magnus*. Whichever of these he takes, and

however often he doubles it or otherwise multiplies it, he finds that after he has continued this doubling in his thoughts, and enlarged his idea as much as he likes, he has no more reason to stop, and is not one bit nearer the end of such addition, than he was when he first set out.[33] Since the power of enlarging his idea of space by further additions still remains the same, he takes from this the idea of infinite space.

2.17.4 *Our idea of space is boundless.*—This, I think, is the way the mind gets the idea of infinite space. Whether the mind has the idea of such a boundless space actually existing is quite a different question, since our ideas are not always proofs of the existence of things. But since it comes up here, I suppose I may say that we are inclined to think that space in itself is actually boundless; and the idea of space or expansion naturally leads us of itself to this imagination. For whether we consider space as the extension of body, or as existing by itself with no solid matter occupying it (for of such a void space we not only have the idea, but I have proved, I think, its necessary existence from the motion of body), it is impossible for the mind ever to find or suppose any end to it, or to be stopped anywhere in its progress through this space, however far it extends its thoughts. Any bounds made of body, even walls of adamant, are so far from stopping the mind in its further progress in space and extension that they rather make that progress easier and extend it. For as far as that body reaches, no one can doubt there is extension. And when we have come to the farthest limit of body, what is there that can stop the mind and satisfy it that it is at the end of space, when it perceives that it is not—indeed, when it is satisfied that body itself can move into it? For if it is necessary for the motion of body that there be some empty space, however little, here among bodies; and if it is possible for body to move in or through that empty space (indeed, it is impossible for any particle of matter to move except into an empty space); then the same possibility of a body's moving into a void space beyond the

33 *Orbis magnus*: "the great orb," the earth's orbit around the sun, the largest length then commonly used in astronomy.

farthest bounds of body, as well as into a void space scattered among bodies, will always remain clear and evident. For the idea of pure empty space, whether inside or beyond the limits of all bodies, is exactly the same, differing not in nature, though in size; and there is nothing to prevent body from moving into it. So wherever the mind places itself in thought, either among all bodies or far from them, it can find no bounds, no end anywhere in this uniform idea of space; and so it must necessarily conclude, from the very nature and idea of each part of it, that space is actually infinite.

2.17.5 *And the same with duration.*—Just as we get the idea of immensity from the power we find in ourselves of repeating any idea of space as often as we like, so, by being able to repeat the idea of any length of duration we have in our minds, with all the endless addition of number, we come by the idea of eternity. For we find in ourselves that we can no more come to an end of such repeated ideas than we can come to the end of number, which everyone perceives he cannot do. But here again, whether there was any real being whose duration has been eternal is another question, quite different from our having an idea of eternity. And as to this, I say that anyone who considers something now existing must necessarily arrive at something eternal. But since I have spoken of this in another place, I will say no more about it here, and will go on to some other points about our idea of infinity.[34]

2.17.6 *Why other ideas are not capable of infinity.*—If our idea of infinity is got from the power we observe in ourselves of repeating our own ideas without end, it may be asked "why we do not attribute infinity to other ideas as well as to those of space and duration," since they can be repeated in our minds as easily and as often as those. Yet nobody ever thinks of infinite sweetness or infinite whiteness, though he can repeat the idea of sweet or white as often as those of a yard or a day. My answer is this. All ideas that are considered as having parts, and that can be increased by adding any equal or smaller parts, give us the idea

34 The argument is given in 4.10, on our knowledge of the existence of God.

of infinity through their repetition, because along with this endless repetition there goes an enlargement that can have no end. But with other ideas it is not so. To the largest idea of extension or duration that I have at present, adding even the smallest part makes an increase. But if to the most perfect idea I have of the whitest whiteness I add another of lesser or equal whiteness (and I cannot add the idea of a whiter one than I have), it makes no increase and does not enlarge my idea at all. That is why the different ideas of whiteness, and so on, are called degrees. For ideas that consist of parts can be increased by every addition of the smallest part. But if you take the idea of white that one patch of snow gave your sight yesterday, and another idea of white from another patch of snow you see today, and put them together in your mind, they merge, as it were, and run into one, and the idea of whiteness is not increased at all. And if we add a lesser degree of whiteness to a greater, far from increasing it, we diminish it. Ideas that do not consist of parts cannot be increased to whatever proportion men like, or stretched beyond what they have received through their senses. But space, duration, and number, being capable of increase by repetition, leave in the mind an idea of endless room for more. Nor can we conceive a stop anywhere to further addition or progression; and so these ideas alone lead our minds toward the thought of infinity.

2.17.7 *The difference between infinity of space and space infinite.*—Our idea of infinity arises from contemplating quantity, and the endless increase the mind is able to make in quantity by repeatedly adding whatever portions of it the mind pleases. Yet I suspect we cause great confusion in our thoughts when we join infinity to some supposed idea of quantity that the mind can be thought to have, and so talk or reason about an infinite quantity —namely, an infinite space or an infinite duration. For our idea of infinity is, I think, an endlessly growing idea; but the idea of any quantity the mind has is, at that time, bounded in that idea (for however great it is, it can be no greater than it is). To join infinity to it, then, is to fit a fixed measure to a growing bulk; and therefore I think it is not a pointless subtlety if I say that we

must carefully distinguish between the idea of the infinity of space and the idea of a space infinite. The first is nothing but a supposed endless progression of the mind over whatever repeated ideas of space it pleases. But to have actually in the mind the idea of a space infinite is to suppose that the mind has already passed over, and actually has in view, all those repeated ideas of space which an endless repetition can never wholly present to it—which carries in it a plain contradiction.

2.17.8 *We have no idea of infinite space.*—This will perhaps be a little plainer if we consider it in numbers. The infinity of numbers, to the end of whose addition everyone perceives there is no approach, is readily apparent to anyone who reflects on it. But however clear this idea of the infinity of number is, nothing is more evident than the absurdity of an actual idea of an infinite number. Whatever positive ideas we have in our minds of any space, duration, or number, however great they are, they are still finite. But when we suppose an inexhaustible remainder, from which we remove all bounds, and in which we allow the mind an endless progression of thought without ever completing the idea, there we have our idea of infinity. This seems fairly clear when we consider nothing in it but the negation of an end. Yet when we try to form in our minds the idea of an infinite space or duration, that idea is very obscure and confused, because it is made up of two very different parts, if not inconsistent ones. For let a man form in his mind an idea of any space or number as great as he likes: it is plain that the mind rests and terminates in that idea, which is contrary to the idea of infinity, which consists in a supposed endless progression. And this, I think, is why we are so easily confused when we come to argue and reason about infinite space or duration, and so on. Since the parts of such an idea are not perceived to be inconsistent, as they are, one side or the other always perplexes us, whatever consequences we draw from the other side. It is just as an idea of motion that does not move on would perplex anyone who argued from such an idea, which is no better than an idea of motion at rest. And the idea of a space, or (which is the same

thing) a number, infinite seems to me to be another of this kind —that is, the idea of a space or number which the mind actually has, and so views and terminates in, joined with that of a space or number which, in a constant and endless enlarging and progression, it can never reach in thought. For however large an idea of space I have in my mind, it is no larger than it is at the instant I have it, even though I may be able the next instant to double it, and so on to infinity. For that alone is infinite which has no bounds; and that alone is the idea of infinity in which our thoughts can find none.

2.17.9 *Number gives us the clearest idea of infinity.*—But of all our ideas it is number, as I have said, that I think supplies us with the clearest and most distinct idea of infinity we are capable of. For even in space and duration, when the mind pursues the idea of infinity, it makes use there of the ideas and repetitions of numbers, such as millions and millions of miles or years. These are so many distinct ideas, kept best by number from running together into a confused heap in which the mind loses itself. And when it has added together as many millions, and so on, as it likes, of known lengths of space or duration, the clearest idea it can get of infinity is the confused, incomprehensible remainder of endlessly addible numbers, which offers no prospect of a stop or boundary.

2.17.10 *Our different conceptions of the infinity of number, duration, and expansion.*—It may give us a little more light on the idea we have of infinity, and show us that it is nothing but the infinity of number applied to determinate parts of which we have distinct ideas in our minds, if we consider that we do not generally think of number as infinite, whereas we are apt to think so of duration and extension. This comes from the fact that in number we are, as it were, at one end: since there is nothing in number smaller than a unit, we stop there and are at an end. But in the addition or increase of number, we can set no bounds. And so number is like a line, one end of which terminates with us, while the other extends forward beyond all we can conceive. But in space and duration it is otherwise. For in duration we consider it as if this

line of number were extended both ways to an inconceivable, indeterminate, and infinite length. This is evident to anyone who will simply reflect on how he thinks of eternity. He will find, I suppose, that it is nothing but turning this infinity of number both ways, *a parte ante* and *a parte post*, as they say.[35] For when we want to consider eternity *a parte ante*, what do we do but start from ourselves and the present time we are in, and repeat in our minds the idea of years, or ages, or any other assignable portion of past duration, with the prospect of carrying on such addition with all the infinity of number? And when we want to consider eternity *a parte post*, we begin from ourselves in just the same way and count by multiplied periods still to come, still extending that line of number as before. And these two put together make that infinite duration we call eternity. Whichever way we turn our view, forward or backward, it appears infinite, because we always turn that way the infinite end of number—that is, the power of always adding more.

2.17.11 The same thing happens also with space. Conceiving ourselves to be, as it were, at the center, we follow those indeterminable lines of number on all sides. Counting in any direction from ourselves a yard, a mile, the diameter of the earth, or the *orbis magnus*, we add others to them by the infinity of number as often as we like. And having no more reason to set bounds to those repeated ideas than we have to set bounds to number, we have that indeterminable idea of immensity.

2.17.12 *Infinite divisibility.*—And since in any bulk of matter our thoughts can never reach the utmost divisibility, there is an apparent infinity for us in that too, which also has the infinity of number. But there is this difference. In the earlier considerations of the infinity of space and duration we use only the addition of numbers, whereas this is like the division of a unit into its fractions, in which the mind can also proceed to infinity just as in the earlier additions—it being in fact still only the addition of new numbers. Yet in the addition of the one we can no more

35 Scholastic phrases: "on the side of before" and "on the side of after," that is, eternity without beginning and eternity without end.

have the positive idea of a space infinitely great than, in the division of the other, we can have the idea of a body infinitely small. Our idea of infinity is, so to speak, a growing or fleeting idea, always in a boundless progression that can stop nowhere.

NO POSITIVE IDEA OF INFINITY

Our idea of infinity is negative: an endless addition that can never be completed.

2.17.13 *No positive idea of infinity.*—It would be hard, I think, to find anyone so absurd as to say he has the positive idea of an actual infinite number, the infinity of which lies only in the power of always adding any combination of units to any previous number, for as long and as much as one likes. The same holds for the infinity of space and duration, where this power always leaves the mind room for endless additions. Yet there are those who imagine they have positive ideas of infinite duration and space. It would be enough, I think, to destroy any such positive idea of infinite to ask the man who has it whether he could add to it or not; this would easily show the mistake of such a positive idea. We can have no positive idea, I think, of any space or duration that is not made up of, and commensurate with, repeated numbers of feet or yards, or of days and years. These are the common measures of which we have the ideas in our minds, and by which we judge the size of quantities of this sort. And therefore, since an infinite idea of space or duration must necessarily be made up of infinite parts, it can have no other infinity than that of number, always capable of further addition—but not an actual positive idea of an infinite number. For it is evident, I think, that adding finite things together (as all lengths are of which we have positive ideas) can never produce the idea of infinite except in the way number does. Number, consisting of additions of infinite units to one another, suggests the idea of infinite only through a power we find we have of always increasing the sum and adding more of the same kind, without coming one bit nearer the end of such progression.

2.17.14 Those who want to prove that their idea of infinite is positive seem to me to do it by an amusing argument taken from the negation of an end: since an end is negative, the negation of it is positive. Anyone who considers that the end of a body is simply the extremity or surface of that body will perhaps not be quick to grant that the end is a mere negative. And anyone who perceives that the end of his pen is black or white will be inclined to think that the end is something more than a pure negation. Nor, when applied to duration, is the end the mere negation of existence; it is more properly its last moment. But if they insist that the end is nothing but the mere negation of existence, I am sure they cannot deny that the beginning is the first instant of being, and that nobody conceives it to be a mere negation. And therefore, by their own argument, the idea of eternal *a parte ante*, or of a duration without a beginning, is only a negative idea.

2.17.15 *What is positive and what negative in our idea of infinite.*— The idea of infinite does, I admit, have something positive in all the things we apply it to. When we want to think of infinite space or duration, we usually begin by forming some very large idea, perhaps of millions of ages or miles, which we may double and multiply several times. All that we thus amass together in our thoughts is positive: an assemblage of a great number of positive ideas of space or duration. But of what still remains beyond this we have no more a positive, distinct notion than a sailor has of the depth of the sea when, having let down a great length of his sounding line, he reaches no bottom. From this he knows the depth is so many fathoms and more; but how much that more is, he has no distinct notion at all. And if he could always supply new line, and find the plummet always sinking without ever stopping, he would be somewhat in the position of the mind reaching after a complete and positive idea of infinity. In that case, whether this line is ten fathoms long or ten thousand, it reveals what lies beyond it to the same extent, giving only this confused and comparative idea: that this is not all, but one can still go further. As much of any space as the mind comprehends, it has a positive idea of. But in trying to make it infin-

ite, the idea, always enlarging and always advancing, remains imperfect and incomplete. As much space as the mind surveys in its contemplation of greatness is a clear picture, and positive in the understanding; but infinite is still greater. 1. So the idea of so much is positive and clear. 2. The idea of greater is also clear, but it is only a comparative idea—namely, the idea of so much greater that it cannot be comprehended—and it is plainly negative, not positive. For no one has a positive, clear idea of the size of any extension (which is what is sought in the idea of infinite) unless he has a comprehensive idea of its dimensions; and no one, I think, claims such an idea of what is infinite. To say that a man has a positive, clear idea of some quantity without knowing how great it is, is as reasonable as to say that a man has a positive, clear idea of the number of grains of sand on the seashore when he does not know how many there are, but only that they are more than twenty. For that is just how perfect and positive an idea of an infinite space or duration a man has who says it is larger than the extent or duration of ten, a hundred, a thousand, or any other number of miles or years of which he has or can have a positive idea. And that, I think, is all the idea we have of infinite. So what lies beyond our positive idea, toward infinity, lies in obscurity. It has the indeterminate confusion of a negative idea, in which I know I neither do nor can comprehend all I would like to, since it is too large for a finite and narrow capacity. And that must be very far from a positive, complete idea, since the greatest part of what I would comprehend is left out, under the indeterminate hint of being still greater. For to say that, having measured so much of some quantity, or gone so far, you are not yet at the end, is only to say that the quantity is greater. So the negation of an end in any quantity is, in other words, only saying that it is bigger. And a total negation of an end is just carrying this "bigger" along with you in all the progressions your thoughts make in quantity, and adding this idea of "still greater" to all the ideas of quantity you have, or can be supposed to have. Now whether such an idea is positive, I leave anyone to consider.

2.17.16 *We have no positive idea of an infinite duration.*—I ask those who say they have a positive idea of eternity whether their idea of duration includes succession or not. If it does not, they ought to show how their notion of duration differs when applied to an eternal being and to a finite one. For perhaps there are others besides me who will confess to them their weakness of understanding on this point, and acknowledge that the notion they have of duration forces them to conceive that whatever has duration has lasted longer today than it had yesterday. If, to avoid succession in eternal existence, they fall back on the *punctum stans* of the Schoolmen, I suppose they will do very little to improve matters, or to help us to a clearer and more positive idea of infinite duration; for nothing is more inconceivable to me than duration without succession. Besides, if that *punctum stans* means anything, it is *non quantum*, without quantity, and so neither finite nor infinite can apply to it.[36] But if our weak understandings cannot separate succession from any duration at all, our idea of eternity can only be of an infinite succession of moments of duration in which something exists. And whether anyone has, or can have, a positive idea of an actual infinite number, I leave him to consider until his infinite number is so great that he himself can add nothing more to it. As long as he can increase it, I suspect he himself will think the idea he has of it a little too meager for positive infinity.

2.17.17 I think it unavoidable for every thoughtful rational creature who will simply examine his own existence or any other to have the notion of an eternal, wise Being who had no beginning; and I am sure I have such an idea of infinite duration. But this negation of a beginning, being only the negation of a positive thing, hardly gives me a positive idea of infinity. Whenever I try to extend my thoughts to that, I confess I am at a loss, and I find I cannot reach any clear comprehension of it.

2.17.18 *No positive idea of infinite space.*—Anyone who thinks he has a positive idea of infinite space will find, when he considers

36 *Punctum stans*, "the standing point" or "standing now": the scholastic account of eternity as a single timeless present.

it, that he can no more have a positive idea of the greatest space than of the least. For in the latter, which seems the easier of the two and more within our grasp, we are capable only of a comparative idea of smallness, which will always be smaller than any we have a positive idea of. All our positive ideas of any quantity, whether great or small, always have bounds, though our comparative idea, by which we can always add to the one and take away from the other, has no bounds. For what remains, whether great or small, is not included in the positive idea we have, and so lies in obscurity; and we have no other idea of it than that of the power of enlarging the one and diminishing the other without ceasing. A pestle and mortar will bring any particle of matter to indivisibility as soon as the sharpest thought of a mathematician will; and a surveyor may as soon measure out infinite space with his chain as a philosopher can reach it by the quickest flight of mind, or comprehend it by thinking—which is what having a positive idea of it would mean. Anyone who thinks of a cube an inch in diameter has a clear and positive idea of it in his mind, and so can form one of a half, a quarter, and an eighth of an inch, and so on, until he has in his thoughts the idea of something very small. But he still does not reach the idea of the incomprehensible smallness that division can produce. What remains of smallness is as far from his thoughts as when he first began; and so he never comes at all to have a clear and positive idea of the smallness that follows from infinite divisibility.

2.17.19 *What is positive and what negative in our idea of infinite.*— Everyone who looks toward infinity, as I have said, forms at first glance some very large idea of what he applies it to, whether space or duration; and he may tire his thoughts by multiplying that first large idea in his mind. But he comes no nearer by this to having a positive, clear idea of what remains to make up a positive infinite than the country fellow had of the water that was still to come and pass through the channel of the river where he stood:

"The rustic waits for the river to run by; but on it glides, and will glide on, rolling, through all time."[37]

2.17.20 *Some think they have a positive idea of eternity, but not of infinite space.*—I have met some people who put so much difference between infinite duration and infinite space that they persuade themselves they have a positive idea of eternity, but that they do not and cannot have any idea of infinite space. The reason for this mistake, I suppose, is as follows. They find, by a proper consideration of causes and effects, that it is necessary to admit some eternal being, and so they consider the real existence of that being as filling and commensurate with their idea of eternity. But on the other side, they do not find it necessary—on the contrary, they find it plainly absurd—that body should be infinite; and so they rashly conclude that they have no idea of infinite space, because they can have no idea of infinite matter. This inference, I think, is very badly drawn. For the existence of matter is in no way necessary to the existence of space, any more than the existence of motion, or of the sun, is necessary to duration, though duration is usually measured by it. And I have no doubt that a man may have the idea of a square ten thousand miles on each side without any body so big, just as he may have the idea of ten thousand years without any body so old. It seems to me as easy to have the idea of space empty of body as to think of the capacity of a bushel without grain, or the hollow of a nutshell without a kernel in it. It is no more necessary that a solid body infinitely extended should exist because we have an idea of the infinity of space than it is necessary that the world should be eternal because we have an idea of infinite duration. And why should we think our idea of infinite space requires the real existence of matter to support it, when we find that we have as clear an idea of an infinite duration to come as we have of infinite duration past? Yet I suppose nobody thinks it conceivable that anything does exist or has existed in that future duration. Nor is it possible to join our idea of future duration with present

37 Horace, *Epistles* 1.2.42–43: "Rusticus expectat dum defluat amnis; at ille / labitur et labetur in omne volubilis aevum."

or past existence, any more than it is possible to make the ideas of yesterday, today, and tomorrow the same, or to bring past and future ages together and make them contemporary. But suppose these men hold that they have clearer ideas of infinite duration than of infinite space because it is beyond doubt that God has existed from all eternity, whereas there is no real matter coextended with infinite space. Still, those philosophers who hold that infinite space is occupied by God's infinite omnipresence, just as infinite duration is by his eternal existence, must be allowed to have as clear an idea of infinite space as of infinite duration—though neither of them, I think, has any positive idea of infinity in either case. For whatever idea of any quantity a man has in his mind, he can repeat it and add it to the former one as easily as he can add together the ideas of two days or two paces, which are positive ideas of lengths he has in his mind, and so on as long as he likes. So if a man had a positive idea of infinite duration or space, he could add two infinites together—indeed, make one infinite infinitely bigger than another: absurdities too gross to be refuted.

2.17.21 *Supposed positive ideas of infinity are a cause of mistakes.*—Yet if, after all this, there are people who persuade themselves that they have clear, positive, comprehensive ideas of infinity, they are welcome to that privilege. I would be very glad, along with some others I know who admit they have no such ideas, to be better informed by their sharing them. For up to now I have been inclined to think that the great and inextricable difficulties that perpetually entangle all discussions of infinity, whether of space, duration, or divisibility, are sure signs of a defect in our ideas of infinity. They show how poorly its nature fits the grasp of our narrow capacities. People talk and argue about infinite space or duration as if they had ideas of them as complete and positive as their ideas of the names they use for them, or of a yard, or an hour, or any other determinate quantity. While they do this, it is no wonder if the incomprehensible nature of the thing they are discussing or reasoning about leads them into perplexities and contradictions, and their minds are over-

whelmed by an object too large and mighty for them to survey and manage.

2.17.22 *All these ideas come from sensation and reflection.*—I have dwelt rather long on duration, space, and number, and on what arises from contemplating them, namely infinity. If so, it is perhaps no more than the subject requires, since there are few simple ideas whose modes give people's thoughts more exercise than these. I do not claim to treat them in their full extent. It is enough for my purpose to show how the mind receives them, such as they are, from sensation and reflection. It is also enough to show how even our idea of infinity, however remote it may seem from any object of sense or operation of our mind, still has its origin there, like all our other ideas. Some mathematicians of advanced speculations may perhaps have other ways of bringing ideas of infinity into their minds. But this does not change the fact that they, like everyone else, got their first ideas of infinity from sensation and reflection, in the way I have set out here.

OTHER SIMPLE MODES

Modes of motion, sound, color and taste, and why only some simple modes have names.

2.18.1 *Modes of motion.*—In the preceding chapters I have shown how the mind, starting from simple ideas taken in by sensation, comes to extend itself even to infinity. This idea may seem more remote than any other from sensible perception. Yet in the end it contains nothing but what is made out of simple ideas received into the mind by the senses and afterward put together there by the mind's faculty of repeating its own ideas. These might be instances enough of simple modes of the simple ideas of sensation, and enough to show how the mind comes by them. Still, for method's sake, I shall give a brief account of a few more, and then proceed to more complex ideas.

2.18.2 Slide, roll, tumble, walk, creep, run, dance, leap, skip, and plenty of others that could be named, are words that everyone who understands English no sooner hears than he immediately

has distinct ideas in his mind. All of these are merely different modifications of motion. Modes of motion correspond to those of extension. Swift and slow are two different ideas of motion, and their measures are made from distances of time and space put together. So they are complex ideas that include time and space along with motion.

2.18.3 *Modes of sounds.*—We have the same variety in sounds. Every articulate word is a different modification of sound. This shows us that the sense of hearing, through such modifications, can furnish the mind with an almost infinite number of distinct ideas. Besides the distinct cries of birds and beasts, sounds are also modified by putting together a variety of different notes of different lengths, which make the complex idea called a tune. A musician can have a tune in his mind when he hears or makes no sound at all, by reflecting on the ideas of those sounds put together silently in his own imagination.

2.18.4 *Modes of colors.*—The modes of colors are also very various. Some we notice as different degrees, or, as they are called, shades, of the same color. But we very seldom put colors together, whether for use or delight, without shape also coming in and playing its part, as in painting, weaving, needlework, and so on. So the ones we notice mostly belong to mixed modes, since they are made up of ideas of different kinds, namely shape and color. Beauty and a rainbow are examples.

2.18.5 *Modes of taste.*—All compound tastes and smells are also modes made up of the simple ideas of those senses. But since we generally have no names for them, they are less noticed and cannot be set down in writing. So I must leave them, unlisted, to my reader's own thoughts and experience.

2.18.6 *Some simple modes have no names.*—In general it may be observed that some simple modes are considered only as different degrees of the same simple idea. Where the difference between them is very small, these usually have no distinct names and are not much noticed as distinct ideas, even though many of them are in themselves quite distinct ideas. Perhaps people have neglected these modes and given them no names

because they lacked measures to distinguish them precisely. Or perhaps it is because, even if they were so distinguished, the knowledge would be of no general or necessary use. I leave that for others to consider. It is enough for my purpose to show that all our simple ideas come into our minds only by sensation and reflection. Once the mind has them, it can repeat and combine them in various ways, and so make new complex ideas. White, red, sweet, and so on have not been modified or made into complex ideas by various combinations so as to be named and thereby ranked into species. But some other simple ideas, namely those of unity, duration, motion, and so on, given as instances above, as well as power and thinking, have been modified in this way into a great variety of complex ideas, with names belonging to them.

2.18.7 *Why some modes have names and others do not.*—The reason for this, I suppose, is as follows. People's great concern is with one another, so the knowledge of people and their actions, and the communicating of it to one another, was most necessary. Therefore they made ideas of actions very finely modified and gave those complex ideas names. That way they could more easily record and discuss the things they dealt with daily, without long roundabout expressions. It also meant that the things they constantly had to give and receive information about could be understood more easily and quickly. In framing different complex ideas and giving them names, people have been largely governed by the purpose of speech in general, which is a very short and quick way of conveying their thoughts to one another. That this is so is evident from the names devised in various crafts. For the sake of speed in giving directions or talking about their work, the members of each trade have applied names to various complex ideas of modified actions belonging to it. People unfamiliar with these operations generally do not frame these ideas in their minds, and so most people who speak the same language do not understand the words that stand for them. For example: colshire, drilling, filtration, cohobation are words standing for certain complex ideas. These ideas are seldom in

anyone's mind except the few whose particular occupations constantly bring them to mind, so these names are generally understood only by smiths and chemists. They have framed the complex ideas these words stand for, and have given names to them or received the names from others. So when they hear these names in conversation, they readily conceive those ideas in their minds. By cohobation, for instance, they conceive all the simple ideas of distilling, and of pouring the liquid distilled from something back onto the remaining matter and distilling it again.[38] Thus we see that there is a great variety of simple ideas, such as tastes and smells, that have no names, and a far greater variety of modes. Either they have not been observed widely enough, or it is of no great use to notice them in people's affairs and conversation. So they have not been given names, and therefore they do not count as species. We shall have occasion to consider this more fully later, when we come to speak of words.

MODES OF THINKING

Sensation, remembrance, contemplation, reverie and dreaming are modes of thinking, the action of the soul.

2.19.1 *Sensation, remembrance, contemplation, etc.*—When the mind turns its view inward on itself and contemplates its own actions, thinking is the first that presents itself. In thinking, the mind observes a great variety of modifications, and from them it receives distinct ideas. Thus there is a perception that actually accompanies, and is attached to, any impression made on the body by an external object. This perception is distinct from all other modifications of thinking, and it furnishes the mind with a distinct idea, which we call sensation. Sensation is, as it were, the actual entrance of an idea into the understanding by the senses. When the same idea recurs without the like object acting on the external sense organ, it is remembrance. If the mind searches for it, and with effort and pains finds it and brings it

38 "Colshire" is an obscure craft term whose meaning is uncertain. "Cohobation" is repeated redistillation, a word of the chemists and alchemists of Locke's day.

back into view, it is recollection. If it is held there for a long time under attentive consideration, it is contemplation. When ideas float in our mind without any reflection or regard on the part of the understanding, it is what the French call reverie; our language has hardly a name for it. When the ideas that present themselves are noticed and, as it were, registered in the memory, it is attention. (As I have observed elsewhere, while we are awake there is always a train of ideas succeeding one another in our minds.) Sometimes the mind, very earnestly and by choice, fixes its view on some idea, considers it from every side, and will not be called away by the ordinary pull of other ideas. That is what we call intention, or study. Sleep without dreaming is rest from all of these. Dreaming itself is having ideas in the mind while the outward senses are stopped, so that they do not receive outward objects with their usual quickness. These ideas are not suggested by any external objects or known occasion, nor are they under any choice or direction of the understanding at all. Whether what we call ecstasy is not simply dreaming with the eyes open, I leave for examination.

2.19.2 These are a few instances of the various modes of thinking that the mind can observe in itself. Its ideas of them can be as distinct as its ideas of white and red, or of a square or a circle. I do not claim to list them all, or to treat at length this set of ideas that are got from reflection. That would fill a volume. It is enough for my present purpose to have shown here, by a few examples, what sort of ideas these are and how the mind comes by them. This is especially so since I shall have occasion later to treat more fully of reasoning, judging, volition, and knowledge, which are some of the most important operations of the mind and modes of thinking.

2.19.3 *The mind's varying attention in thinking.*—But perhaps it would not be an unpardonable digression, nor wholly irrelevant to our present plan, to reflect here on the mind's different states in thinking. The instances mentioned above, such as attention, reverie, and dreaming, quite naturally suggest them. Everyone's experience convinces him that some ideas or other are always

present in the mind of a waking man, though the mind occupies itself with them with various degrees of attention. Sometimes the mind fixes itself so earnestly on contemplating certain objects that it turns their ideas on every side and notes their relations and circumstances. It views every part so precisely and with such intensity that it shuts out all other thoughts. It even takes no notice of the ordinary impressions then being made on the senses, which at another time would produce very noticeable perceptions. At other times it merely observes the train of ideas succeeding one another in the understanding, without directing or pursuing any of them. And at still other times it lets them pass almost entirely unregarded, like faint shadows that make no impression.

2.19.4 *Hence it is probable that thinking is the action, not the essence, of the soul.*—The mind's thinking can be more intense or more slack, with a great variety of degrees between earnest study and minding very nearly nothing at all. Everyone, I think, has experienced this difference in himself. Trace it a little further, and you find the mind in sleep withdrawn, as it were, from the senses. It is out of reach of the motions made on the sense organs, which at other times produce very vivid and noticeable ideas. To show this, I need not cite those who sleep through whole stormy nights without hearing the thunder, or seeing the lightning, or feeling the house shake, though all of this is noticeable enough to those who are awake. But in this withdrawal from the senses, the mind often keeps a still looser and more incoherent way of thinking, which we call dreaming. Finally, sound sleep closes the scene altogether and puts an end to all appearances. Almost everyone, I think, has experienced this in himself, and his own observation easily leads him this far. What I would further conclude from this is as follows. At different times the mind can noticeably take on different degrees of thinking. Sometimes, even in a waking man, it is so slack that its thoughts are dim and obscure, to the point of being hardly different from none at all. And in the end, in the dark retreat of sound sleep, it completely loses sight of all ideas whatsoever.

Since, I say, this is evidently so, as a matter of fact and constant experience, I ask whether it is not probable that thinking is the action, and not the essence, of the soul, since the operations of agents readily admit of being intensified and relaxed, but the essences of things are not thought capable of any such variation. But this is by the way.

PLEASURE AND PAIN

Good and evil are defined by pleasure and pain, which give rise to love, desire, joy and other passions.

2.20.1 *Pleasure and pain are simple ideas.*—Among the simple ideas we receive from both sensation and reflection, pain and pleasure are two very important ones. In the body there is sensation that is either bare in itself or accompanied by pain or pleasure. In the same way, the thought or perception of the mind is either simply that, or else accompanied also by pleasure or pain, delight or trouble, call it what you like. These, like other simple ideas, cannot be described, and their names cannot be defined. As with the simple ideas of the senses, the only way of knowing them is by experience. For to define them by the presence of good or evil makes them known to us in no other way than by making us reflect on what we feel in ourselves from the various operations of good and evil on our minds, as these are variously applied to us or considered by us.

2.20.2 *What good and evil are.*—Things, then, are good or evil only in relation to pleasure or pain. We call good whatever tends to cause or increase pleasure in us, or to diminish pain, or else to procure or preserve for us the possession of some other good or the absence of some evil. Conversely, we call evil whatever tends to produce or increase some pain in us, or to diminish some pleasure, or else to bring some evil on us or deprive us of some good. By pleasure and pain I must be understood to mean those of body or of mind, as they are commonly distinguished. In truth, though, they are only different states of the mind,

sometimes occasioned by disorder in the body, sometimes by thoughts of the mind.

2.20.3 *Our passions are moved by good and evil.*—Pleasure and pain, and what causes them, good and evil, are the hinges on which our passions turn. We can reflect on ourselves and observe how these operate in us under various aspects: what modifications or tempers of mind, what internal sensations (if I may call them that) they produce in us. From this we can form for ourselves the ideas of our passions.

2.20.4 *Love.*—Thus anyone who reflects on his thought of the delight that some present or absent thing tends to produce in him has the idea we call love. When a man declares that he loves grapes, whether in autumn while he is eating them or in spring when there are none, he means no more than that the taste of grapes delights him. Let a change in health or constitution destroy the delight of their taste, and he can no longer be said to love grapes.

2.20.5 *Hatred.*—On the other hand, the thought of the pain that something present or absent tends to produce in us is what we call hatred. It is my business here to inquire only into the bare ideas of our passions as they depend on different modifications of pleasure and pain. If it were my business to go further, I would remark that our love and hatred of inanimate, insensible beings is commonly based on the pleasure and pain we receive from using them and applying them in some way to our senses, even though this destroys them. But hatred or love toward beings capable of happiness or misery is often the uneasiness or delight we find in ourselves when we consider their very existence or happiness. Thus the existence and welfare of a man's children or friends produce constant delight in him, and so he is said to love them constantly. But it is enough to note that our ideas of love and hatred are simply the dispositions of the mind with respect to pleasure and pain in general, however these are caused in us.

2.20.6 *Desire.*—There are things whose present enjoyment carries the idea of delight with it. The uneasiness a man finds in

himself at the absence of such a thing is what we call desire. Desire is greater or less as that uneasiness is more or less intense. Here, by the way, it may be of some use to remark that the chief, if not the only, spur to human industry and action is uneasiness. For whatever good is proposed, if its absence brings no displeasure or pain with it, and a man is easy and content without it, then there is no desire for it and no effort toward it. There is no more than a bare velleity. That is the term used for the lowest degree of desire, the one next to none at all. It is when there is so little uneasiness in the absence of something that it carries a man no further than a few faint wishes for it, without any more effective or vigorous use of the means to obtain it. Desire is also stopped or reduced by the belief that the proposed good is impossible or unattainable, to the extent that this consideration cures or eases the uneasiness. This might lead our thoughts further, if this were the right place.

2.20.7 *Joy.*—Joy is a delight of the mind that comes from considering the present, or assured and approaching, possession of a good. And we are in possession of a good when we have it so much in our power that we can use it when we please. Thus a man who is nearly starving feels joy at the arrival of relief even before he has the pleasure of using it. Likewise, a father who takes delight in the very well-being of his children is always in possession of that good, as long as his children are in that state, for he need only reflect on it to have that pleasure.

2.20.8 *Sorrow.*—Sorrow is uneasiness in the mind at the thought of a lost good that might have been enjoyed longer, or at the sense of a present evil.

2.20.9 *Hope.*—Hope is the pleasure in the mind that everyone finds in himself at the thought of a future enjoyment, to his advantage, of something that tends to delight him.

2.20.10 *Fear.*—Fear is an uneasiness of the mind at the thought of a future evil likely to befall us.

2.20.11 *Despair.*—Despair is the thought that some good is unattainable. It works differently in different people's minds, sometimes producing uneasiness or pain, sometimes rest and ease.

2.20.12 *Anger.*—Anger is uneasiness or disturbance of the mind on receiving some injury, together with a present intention of revenge.

2.20.13 *Envy.*—Envy is an uneasiness of the mind caused by considering a good we desire that has been obtained by someone we think should not have had it before us.

2.20.14 *What passions all men have.*—These last two, envy and anger, are not caused simply by pain and pleasure in themselves. They contain some mixed considerations of ourselves and others. So they are not found in everyone, because some people lack those other elements: valuing their own merits, or intending revenge. But all the rest end purely in pain and pleasure, and are, I think, found in everyone. For we love, desire, rejoice, and hope only with respect to pleasure, and we hate, fear, and grieve ultimately only with respect to pain. In short, things move all these passions only insofar as they appear to be the causes of pleasure and pain, or to have pleasure or pain attached to them in one way or another. Thus we usually extend our hatred to the thing that has caused us pain, at least if it is a sentient or voluntary agent, because the fear it leaves behind is a constant pain. But we do not so constantly love what has done us good. That is because pleasure does not act on us as strongly as pain, and because we are not so quick to hope that it will do us good again. But this is by the way.

2.20.15 *What pleasure and pain are.*—By pleasure and pain, delight and uneasiness, I must be understood throughout, as I indicated above, to mean more than bodily pain and pleasure. I mean whatever delight or uneasiness we feel, whether it arises from an agreeable or a disagreeable sensation or reflection.

2.20.16 It should further be considered that, where the passions are concerned, the removal or lessening of a pain is regarded as a pleasure and operates as one. In the same way, the loss or lessening of a pleasure is regarded as a pain.

2.20.17 *Shame.*—Most of the passions, in most people, also act on the body and cause various changes in it. But these changes are not always noticeable, so they are not a necessary part of the

idea of each passion. Shame, for example, is an uneasiness of the mind at the thought of having done something indecent, or something that will lessen the esteem others have for us, which we value. Yet shame is not always accompanied by blushing.

2.20.18 *These instances show how our ideas of the passions are got from sensation and reflection.*—I do not want to be misunderstood here, as if I meant this as a treatise on the passions. There are many more of them than those I have named here, and each of those I have noted would require a much longer and more accurate discussion. I have mentioned these only as so many instances of modes of pleasure and pain arising in our minds from various considerations of good and evil. I might perhaps have cited other modes of pleasure and pain simpler than these. There is the pain of hunger and thirst, and the pleasure of eating and drinking to remove them. There is the pain of sore eyes, and the pleasure of music. There is the pain of captious, unenlightening wrangling, and the pleasure of rational conversation with a friend, or of well-directed study in the search for and discovery of truth. But the passions matter much more to us, so I chose to cite them instead, and to show how the ideas we have of them are derived from sensation and reflection.

POWER

The idea of power comes from observing change, and most clearly from our own power to move and think.

2.21.1 *How this idea is got.*—Every day the senses inform the mind of changes in the simple ideas it observes in things outside it. The mind notices how one comes to an end and ceases to be, and another begins to exist that was not there before. It also reflects on what passes within itself, and observes a constant change of its ideas, sometimes through the impression of outward objects on the senses, and sometimes through the determination of its own choice. From what it has so constantly observed to have happened, it concludes that similar changes will in future be made in the same things, by similar agents and

in similar ways. So it considers, in one thing, the possibility of having some of its simple ideas changed, and in another, the possibility of making that change. In this way it comes by the idea we call power. Thus we say that fire has a power to melt gold, that is, to destroy the cohesion of its insensible parts, and consequently its hardness, and make it fluid. And we say that gold has a power to be melted. We also say that the sun has a power to bleach wax, and wax a power to be bleached by the sun, so that its yellowness is destroyed and whiteness is made to exist in its place. In these and similar cases, the power we consider is related to the change of perceivable ideas. We can observe an alteration made in something, or an operation on it, only through the observable change of its sensible ideas. Nor can we conceive any alteration being made except by conceiving a change in some of its ideas.

2.21.2 *Power, active and passive.*—Power considered in this way is twofold: namely, the ability to make some change, or the ability to receive it. The one may be called active power, the other passive power. It may be worth considering whether matter is not wholly without active power, just as its author, God, is truly above all passive power. It may also be worth considering whether the intermediate state of created spirits is not the only one capable of both active and passive power. I shall not enter into that inquiry now. My present business is not to search into the origin of power, but into how we come by the idea of it. Active powers make up so large a part of our complex ideas of natural substances (as we shall see later) that I mention them as such, following common understanding. Yet perhaps they are not so truly active powers as our hasty thoughts tend to represent them. So I think it not amiss, by this hint, to direct our minds to the consideration of God and spirits for the clearest idea of active powers.

2.21.3 *Power includes relation.*—I admit that power includes some kind of relation in it, a relation to action or change. But which of our ideas, of whatever kind, does not, when attentively considered? For do not our ideas of extension, duration, and num-

ber all contain a hidden relation of the parts? Shape and motion have something relative in them much more visibly. And what are sensible qualities, such as colors and smells, but the powers of different bodies in relation to our perception? And so on. If they are considered in the things themselves, do they not depend on the bulk, shape, texture, and motion of the parts? All of these include some kind of relation in them. So our idea of power, I think, may well have a place among the other simple ideas and be considered one of them. It is one of those that make up a principal ingredient in our complex ideas of substances, as we shall have occasion to observe later.

2.21.4 *The clearest idea of active power is had from spirit.*—Almost every sort of sensible thing supplies us abundantly with the idea of passive power. In most of them we cannot help observing that their sensible qualities, and even their very substances, are in continual flux. So we reasonably regard them as always liable to the same change. Nor do we have fewer instances of active power, which is the more proper meaning of the word "power." For whenever a change is observed, the mind must infer a power somewhere able to make that change, as well as a possibility in the thing itself to receive it. But if we consider it attentively, bodies, through our senses, do not give us so clear and distinct an idea of active power as we get from reflection on the operations of our minds. All power relates to action, and there are only two sorts of action of which we have any idea, namely thinking and motion. So let us consider where we get the clearest ideas of the powers that produce these actions. 1. Of thinking, body gives us no idea at all. We have that only from reflection. 2. Nor do we get from body any idea of the beginning of motion. A body at rest gives us no idea of any active power to move. And when it is itself set in motion, that motion is a passion in it rather than an action. For when the ball obeys the stroke of a billiard cue, this is not any action of the ball but mere passion. Also, when by impact it sets in motion another ball lying in its way, it only passes on the motion it had received from another, and it loses as much itself as the other receives.

This gives us only a very obscure idea of an active power of moving in body, since we observe body only transferring motion, not producing it.[39] For an idea of power that does not reach the production of the action, but only the continuation of the passion, is a very obscure one. And that is what motion is in a body pushed by another. The continuation of the change made in it from rest to motion is hardly more an action than the continuation of the change in its shape made by the same blow. We have the idea of the beginning of motion only from reflection on what passes in ourselves. There we find by experience that merely by willing it, merely by a thought of the mind, we can move parts of our bodies that were previously at rest. So it seems to me that when we observe the operation of bodies by our senses, we get only a very imperfect, obscure idea of active power. Bodies in themselves do not give us any idea of the power to begin any action, whether motion or thought. But suppose someone thinks he has a clear idea of power from the impact that bodies are observed to make on one another. That serves my purpose just as well, since sensation is one of the ways by which the mind comes by its ideas. I only thought it worthwhile to consider here, in passing, whether the mind does not receive its idea of active power more clearly from reflection on its own operations than from any external sensation.

2.21.5 *Will and understanding are two powers.*—This at least I think is evident. We find in ourselves a power to begin or forbear, continue or end, various actions of our minds and motions of our bodies. We do this merely by a thought or preference of the mind that orders, or as it were commands, the doing or not doing of this or that particular action. The mind has this power to order the consideration of some idea, or the forbearing to consider it. It also has the power to prefer the motion of some part of the body to its rest, and vice versa, in any particular instance. This power is what we call the will. The actual exercise of that power, by directing some particular action or its forbear-

39 "Passion" here has its old philosophical sense: being acted upon, the opposite of action.

ance, is what we call volition or willing. The forbearance of that action, following on such an order or command of the mind, is called voluntary. And any action performed without such a thought of the mind is called involuntary. The power of perception is what we call the understanding. Perception, which we take to be the act of the understanding, is of three sorts: 1. The perception of ideas in our minds. 2. The perception of the meaning of signs. 3. The perception of the connection or incompatibility, agreement or disagreement, that there is between any of our ideas. All these are attributed to the understanding, or perceptive power, though ordinary usage allows us to say we understand only in the case of the last two.

2.21.6 *Faculty.*—These powers of the mind, namely perceiving and preferring, are usually called by another name. The ordinary way of speaking is that the understanding and the will are two faculties of the mind. This is a proper enough word, if it is used as all words should be. It must not breed confusion in people's thoughts by being taken, as I suspect it has been, to stand for some real beings in the soul that performed those actions of understanding and volition. For we say that the will is the commanding and superior faculty of the soul, that it is or is not free, that it determines the inferior faculties, that it follows the dictates of the understanding, and so on. These and similar expressions may be understood in a clear and distinct sense by those who pay careful attention to their own ideas and conduct their thoughts more by the evidence of things than by the sound of words. Yet I suspect, I say, that this way of speaking of faculties has misled many into a confused notion of so many distinct agents in us. They take these agents to have their separate provinces and authorities, and to command, obey, and perform different actions, as so many distinct beings. This has been no small cause of wrangling, obscurity, and uncertainty in questions relating to them.

LIBERTY AND NECESSITY

Liberty is a power to act or forbear as the mind prefers, and belongs to agents, not wills.

2.21.7 *Where the ideas of liberty and necessity come from.*—Everyone, I think, finds in himself a power to begin or forbear, continue or put an end to, various actions in himself. Everyone finds that this power of the mind over the man's actions has a certain extent, and from considering that extent arise the ideas of liberty and necessity.

2.21.8 *What liberty is.*—All the actions we have any idea of come down, as has been said, to these two, namely thinking and motion. A man has the power to think or not to think, to move or not to move, according to the preference or direction of his own mind, and so far as he has this power, so far is he free. Sometimes doing and forbearing are not equally in a man's power, and doing or not doing will not equally follow on the preference of his mind directing it. Wherever this is so, he is not free, though the action may perhaps be voluntary. So the idea of liberty is the idea of a power in an agent to do or forbear some particular action, according to the determination or thought of the mind by which one of them is preferred to the other. Where the agent does not have the power to produce either of them according to his volition, there he is not at liberty; that agent is under necessity. So liberty cannot exist where there is no thought, no volition, no will. But there may be thought, there may be will, there may be volition, where there is no liberty. A little consideration of an obvious instance or two may make this clear.

2.21.9 *Supposes the understanding and will.*—No one takes a tennis ball to be a free agent, whether it is moving from the stroke of a racket or lying still at rest. If we ask why, we will find it is because we do not conceive a tennis ball to think. So we do not conceive it to have any volition, or any preference of motion to rest, or the reverse. It therefore does not have liberty; it is not a

free agent. Both its motion and its rest fall under our idea of necessary, and are called so. Likewise, a man who falls into the water (because a bridge breaks under him) does not have liberty in this; he is not a free agent. For though he has volition, and prefers not falling to falling, the forbearance of that motion is not in his power. The stopping or ceasing of that motion does not follow his volition, and so in this he is not free. In the same way, suppose a man strikes himself or his friend through a convulsive motion of his arm, which it is not in his power to stop or forbear by volition or by the direction of his mind. Nobody thinks he has liberty in this. Everyone pities him, as acting by necessity and constraint.

2.21.10 *Belongs not to volition.*—Again, suppose a man is carried, while fast asleep, into a room where there is a person he longs to see and speak with. He is locked in there, with no power to get out. He wakes up and is glad to find himself in such desirable company, and he stays there willingly; that is, he prefers staying to going away. I ask: is not this staying voluntary? I think nobody will doubt it. And yet, since he is locked in, it is evident that he is not at liberty not to stay; he does not have the freedom to leave. So liberty is not an idea that belongs to volition, or preferring. It belongs to the person who has the power of doing, or forbearing to do, as the mind chooses or directs. Our idea of liberty reaches as far as that power, and no farther. Wherever restraint comes in to check that power, or compulsion takes away that indifference of ability, the equal ability to act or to forbear acting, there liberty, and our notion of it, immediately ceases.

2.21.11 *Voluntary opposed to involuntary, not to necessary.*—We have examples enough, and often more than enough, in our own bodies. A man's heart beats and his blood circulates, and it is not in his power to stop them by any thought or volition. With respect to these motions, then, he is not a free agent, since rest does not depend on his choice and would not follow the determination of his mind even if it preferred rest. Suppose convulsive motions shake his legs, so that however much he wills it, he can-

not stop their motion by any power of his mind (as in that odd disease called *Chorea Sancti viti*, St. Vitus's dance), and he is perpetually dancing. He is not at liberty in this action. He is under as much necessity of moving as a falling stone, or a tennis ball struck with a racket. On the other hand, a palsy or the stocks may prevent his legs from obeying the determination of his mind, if it wanted to move his body to another place by means of them. In all these cases there is a lack of freedom. Yet the sitting still even of a paralyzed man, as long as he prefers it to moving, is truly voluntary. So voluntary is not opposed to necessary, but to involuntary. A man may prefer what he can do to what he cannot do. He may prefer the state he is in to its absence or its change, even though necessity has made that state unalterable in itself.

2.21.12 *Liberty, what.*—As it is with the motions of the body, so it is with the thoughts of our minds. Where any thought is such that we have power to take it up or lay it aside, according to the preference of the mind, there we are at liberty. A waking man is under the necessity of constantly having some ideas in his mind. So he is not at liberty to think or not to think, any more than he is at liberty whether his body shall touch some other body or not. But whether he will move his attention from one idea to another is often in his choice. He is then as much at liberty with respect to his ideas as he is with respect to the bodies he rests on: he can move himself from one to another as he pleases. Still, some ideas are to the mind as some motions are to the body. In certain circumstances the mind cannot avoid them, nor get rid of them by the utmost effort it can make. A man on the rack is not at liberty to lay aside the idea of pain and amuse himself with other thoughts. And sometimes a violent passion hurries our thoughts along, as a hurricane does our bodies, without leaving us the liberty of thinking about other things we would rather choose. But the mind may regain the power to stop or continue, begin or forbear, any of these motions of the body without, or thoughts within, as it sees fit to prefer one to the other. As soon as it does, we consider the man a free agent again.

2.21.13 *Necessity, what.*—Wherever thought is wholly lacking, or the power to act or forbear according to the direction of thought is lacking, there necessity takes over. Take an agent capable of volition. When the beginning or continuing of an action is contrary to that preference of his mind, this is called compulsion. When the hindering or stopping of an action is contrary to his volition, it is called restraint. Agents that have no thought and no volition at all are necessary agents in everything.

2.21.14 *Liberty belongs not to the will.*—If this is so (as I believe it is), I leave it to be considered whether it may help to end that long-debated question: namely, whether man's will is free or not. I think the question is unreasonable, because it is unintelligible. If I am not mistaken, it follows from what I have said that the question itself is altogether improper. It is as meaningless to ask whether a man's will is free as to ask whether his sleep is swift or his virtue square. Liberty applies as little to the will as swiftness of motion does to sleep, or squareness to virtue. Everyone would laugh at the absurdity of either of these questions, because it is obvious that the modifications of motion do not belong to sleep, nor differences of shape to virtue. Anyone who considers it carefully will, I think, see just as plainly that liberty belongs only to agents. Liberty is only a power, and it cannot be an attribute or modification of the will, which is also only a power.

2.21.15 *Volition.*—It is so hard to explain internal actions and give clear notions of them by means of sounds that I must warn my reader here. The words ordering, directing, choosing, preferring, etc., which I have used, will not express volition distinctly enough unless he reflects on what he himself does when he wills. For example, preferring perhaps seems best to express the act of volition, but it does not express it precisely. A man would prefer flying to walking, but who can say he ever wills it? Volition, it is plain, is an act of the mind knowingly exerting the dominion it takes itself to have over any part of the man. It does this by employing that part in some particular action, or by withholding it from that action. And what is the will but the fac-

ulty of doing this? And is that faculty in effect anything more than a power, the power of the mind to determine its thoughts toward producing, continuing, or stopping any action, so far as this depends on us? Can it be denied that any agent with a power to think about its own actions, and to prefer doing them or omitting them, has the faculty called will? Will, then, is nothing but such a power. Liberty, on the other hand, is the power a man has to do or forbear doing any particular action, according as its doing or its forbearance has the actual preference in the mind. That is the same as saying: according as he himself wills it.

2.21.16 *Powers belonging to agents.*—It is plain, then, that the will is nothing but one power or ability, and freedom another power or ability. So to ask whether the will has freedom is to ask whether one power has another power, one ability another ability. At first sight the question is too grossly absurd to dispute or to need an answer. Who does not see that powers belong only to agents, and are attributes only of substances, not of powers themselves? So this way of putting the question, namely, whether the will is free, is in effect to ask whether the will is a substance, an agent, or at least to presuppose that it is, since freedom cannot properly be attributed to anything else. If freedom can be applied to a power with any propriety of speech at all, it may be attributed to the power a man has to produce, or forbear producing, motion in parts of his body by choice or preference. This is what makes him be called free, and it is freedom itself. But anyone who asked whether freedom was free would be suspected of not understanding well what he was saying. It would be like a man who knows that "rich" is a name for the possession of riches, and then asks whether riches themselves are rich. He would be thought to deserve Midas's ears.[40]

2.21.17 Men have given the name faculty to this power called the will, and this has led them into a way of talking about the will as acting. The name may soften the absurdity a little, by a usage that disguises its true sense. Yet in truth the will signifies noth-

40 In Ovid's *Metamorphoses* (Book 11), Apollo gave King Midas the ears of an ass for his foolish judgment in a musical contest.

ing but a power or ability to prefer or choose. Consider the will, under the name of a faculty, as what it is: simply an ability to do something. Then the absurdity of saying it is free, or not free, will easily show itself. Suppose it is reasonable to treat faculties as distinct beings that can act, and to talk of them that way (as we do when we say the will orders, and the will is free). Then we ought to make a speaking faculty, a walking faculty, and a dancing faculty, by which those actions are produced, though they are only different modes of motion. That is just what we do when we make the will and the understanding faculties by which the actions of choosing and perceiving are produced, though these are only different modes of thinking. And we may as properly say that it is the singing faculty that sings and the dancing faculty that dances, as that the will chooses or the understanding conceives. It is equally proper to say, as people usually do, that the will directs the understanding, or that the understanding obeys or does not obey the will. It would be exactly as proper and intelligible to say that the power of speaking directs the power of singing, or that the power of singing obeys or disobeys the power of speaking.

2.21.18 Nevertheless this way of talking has prevailed and, I suspect, has produced great confusion. These are all different powers in the mind, or in the man, to do various actions, and he exerts them as he sees fit. But the power to do one action is not acted upon by the power of doing another action. The power of thinking does not operate on the power of choosing, nor the power of choosing on the power of thinking. No more does the power of dancing operate on the power of singing, or the power of singing on the power of dancing, as anyone who reflects on it will easily see. And yet this is what we are saying when we talk of the will operating on the understanding, or the understanding on the will.

2.21.19 I grant that this or that actual thought may be the occasion of volition, that is, of exercising the power a man has to choose. I grant too that the actual choice of the mind may be the cause of actually thinking about this or that thing. In the same

way, actually singing a certain tune may be the cause of dancing a certain dance, and actually dancing a certain dance the occasion of singing a certain tune. But in all these cases it is not one power that operates on another. It is the mind that operates and exerts these powers. It is the man that does the action. It is the agent that has power, or is able to do. For powers are relations, not agents. Only that which has or lacks the power to operate is or is not free, not the power itself. Freedom, or the lack of it, can belong only to what has or does not have a power to act.

2.21.20 *Liberty belongs not to the will.*—This way of talking arose from attributing to faculties what did not belong to them. The name of faculties brought into discussions of the mind a notion of their operating. That notion has, I suppose, advanced our knowledge of that part of ourselves as little as the same sort of invented faculties, so much used and mentioned in the operations of the body, have helped our knowledge of medicine. I do not deny that there are faculties, both in the body and in the mind. Both have their powers of operating, or else neither could operate. For nothing can operate that is not able to operate, and nothing is able to operate that has no power to operate. Nor do I deny that those words, and others like them, should keep their place in the common usage of the languages that have made them current. It would look like too much affectation to give them up altogether. Philosophy itself does not like gaudy dress. Yet when it appears in public, it must be obliging enough to be clothed in the ordinary fashion and language of the country, so far as this is consistent with truth and clarity. The fault has been that faculties have been spoken of and represented as so many distinct agents. Suppose someone asked what digested the food in our stomachs. It was a ready and very satisfactory answer to say that it was the digestive faculty. What made anything come out of the body? The expulsive faculty. What moved? The motive faculty. And so in the mind, the intellectual faculty, or the understanding, understood; and the elective faculty, or the will, willed or commanded. In short, this is to say that the ability to digest digested, the ability to move moved, and the ability to

understand understood. For faculty, ability, and power are, I think, just different names for the same things. Put into more intelligible words, these ways of speaking amount, I think, to this much. Digestion is performed by something that is able to digest, motion by something able to move, and understanding by something able to understand. And in truth it would be very strange if it were otherwise, as strange as it would be for a man to be free without being able to be free.

2.21.21 *But to the agent or man.*—To return, then, to the inquiry about liberty. I think the proper question is not whether the will is free, but whether a man is free. So I think,

1. That a man is free to the extent that he can, by the direction or choice of his mind, make an action exist or not exist, by preferring its existence to its nonexistence, or the reverse. Suppose I can make my finger move when it was at rest, or the reverse, by a thought directing its motion. It is then evident that in that respect I am free. And suppose I can produce either words or silence by a similar thought of my mind preferring one to the other. Then I am at liberty to speak or hold my peace. A man is free as far as this power reaches, the power of acting or not acting by the determination of his own thoughts preferring one or the other. For how can we think anyone freer than to have the power to do what he will? A man can do what he wills to the extent that he can produce an action, or rest, by preferring the action to its not being, or rest to the action. For such a preferring of an action to its absence is the willing of it. We can hardly tell how to imagine any being freer than to be able to do what it wills. So with respect to actions within the reach of such a power in him, a man seems as free as it is possible for freedom to make him.

2.21.22 *In respect of willing a man is not free.*—But the inquisitive mind of man wants to shift all thoughts of guilt off himself as far as he can, even if it means putting himself into a worse state than that of fatal necessity. So he is not content with this. Freedom will not serve the purpose unless it reaches farther than this. It passes for a good plea that a man is not free at all if he is

not as free to will as he is to do what he wills. So a further question is raised about a man's liberty: is a man free to will? This, I think, is what is meant when people dispute whether the will is free. And as to that, I think,

2.21.23 —2. That once some action in a man's power is proposed to his thoughts as something to be done right now, he cannot be free with respect to willing, or the act of volition. This is because willing, or volition, is an action, and freedom consists in a power of acting or not acting. The reason is very plain. The action depending on his will must unavoidably either exist or not exist, and its existence or nonexistence follows exactly the determination and preference of his will. So he cannot avoid willing either the existence or the nonexistence of that action. It is absolutely necessary that he will the one or the other, that is, prefer the one to the other, since one of them must necessarily follow. The one that does follow, follows by the choice and determination of his mind, that is, by his willing it; for if he did not will it, it would not be. So in such a case a man is not free with respect to the act of willing. Liberty consists in a power to act or not to act, and once such a proposal is made, a man does not have that power with regard to volition. Once an action in a man's power has been proposed to his thoughts in this way, it is unavoidably necessary to prefer either doing it or forbearing it. A man must necessarily will one or the other of them. Upon that preference or volition, the action, or its forbearance, certainly follows and is truly voluntary. But the act of volition, or preferring one of the two, is something he cannot avoid. So a man is under necessity with respect to that act of willing, and cannot be free. The only escape would be if necessity and freedom could coexist, and a man could be free and bound at the same time.

2.21.24 This much, then, is evident: in all proposals of present action, a man is not at liberty to will or not to will, because he cannot forbear willing. Liberty consists in a power to act or to forbear acting, and in that alone. A man who sits still is still said to be at liberty, because he can walk if he wills it. But if a man

sitting still does not have the power to move himself, he is not at liberty. Likewise a man falling down a precipice is in motion, but he is not at liberty, because he cannot stop that motion even if he wanted to. This being so, take a man who is walking, and suppose it is proposed to him that he stop. It is plain that he is not at liberty whether or not he will determine himself to keep walking or to stop. He must necessarily prefer one or the other of them, walking or not walking. And it is the same with all other actions in our power that are proposed in this way, which are by far the greater number. Consider the vast number of voluntary actions that follow one another every moment we are awake in the course of our lives. Only a few of them are thought about, or proposed to the will, before the time they are to be done. And in all such actions, as I have shown, the mind does not have, with respect to willing, a power to act or not to act, which is what liberty consists in. In that case the mind has no power to forbear willing. It cannot avoid making some determination about them, however brief the consideration and however quick the thought. It either leaves the man in the state he was in before thinking, or changes it. It either continues the action or puts an end to it. From this it is plain that the mind orders and directs one in preference to the other, or with neglect of the other. In this way either the continuation or the change unavoidably becomes voluntary.

2.21.25 *The will determined by something without it.*—It is plain, then, that in most cases a man is not at liberty whether he will will or not. The next thing asked is whether a man is at liberty to will whichever of the two he pleases, motion or rest. This question carries its absurdity so plainly in itself that this alone might be enough to convince us that liberty has nothing to do with the will. To ask whether a man is at liberty to will whichever he pleases, motion or rest, speaking or silence, is to ask whether a man can will what he wills, or be pleased with what he is pleased with. That question, I think, needs no answer. Those who can make a question of it must suppose one will to determ-

ine the acts of another, and another to determine that one, and so on to infinity.

2.21.26 To avoid these and similar absurdities, nothing can be more useful than to establish in our minds determinate ideas of the things under consideration. Suppose the ideas of liberty and volition were firmly fixed in our understandings, and carried along with us in our minds, as they should be, through all the questions raised about them. Then, I suppose, a great part of the difficulties that perplex men's thoughts and entangle their understandings would be much more easily resolved. We would also see where the obscurity was caused by the confused meaning of terms, and where by the nature of the thing itself.

2.21.27 *Freedom.*—First, then, it must be carefully remembered that freedom consists in the dependence of the existence or nonexistence of an action on our volition of it. It does not consist in the dependence of an action, or its contrary, on our preference. A man standing on a cliff is at liberty to leap twenty yards down into the sea. This is not because he has a power to do the contrary action, which is to leap twenty yards upward, for that he cannot do. He is free because he has a power to leap or not to leap. But if a force greater than his either holds him fast or throws him down, he is no longer free in that case. Doing or forbearing that particular action is no longer in his power. Suppose a man is kept as a close prisoner in a room twenty feet square, and is standing at the north side of it. He is at liberty to walk twenty feet southward, because he can walk it or not walk it. But he is not at the same time at liberty to do the contrary, that is, to walk twenty feet northward.

Freedom, then, consists in this: namely, in our being able to act or not to act, according as we choose or will.

2.21.28 *Volition, what.*—Secondly, we must remember that volition or willing is an act of the mind directing its thought to the production of some action, and thereby exerting its power to produce it. To avoid multiplying words, I ask permission here to include under the word action the forbearance of any proposed action as well. Sitting still, or holding one's peace, when walking

or speaking is proposed, are mere forbearances. But they require the determination of the will just as much as the contrary actions do, and their consequences are as often weighty. On that account they may well enough pass for actions too. I say this so that I will not be misunderstood if, for brevity's sake, I speak this way.

2.21.29 *What determines the will.*—Thirdly, the will is nothing but a power in the mind to direct the operative faculties of a man to motion or rest, so far as they depend on such direction. So the true and proper answer to the question, What is it that determines the will? is: the mind. What determines the general power of directing to this or that particular direction is nothing but the agent itself, exercising the power it has in that particular way. If this answer does not satisfy, the question What determines the will? plainly means this: What moves the mind, in each particular instance, to determine its general power of directing to this or that particular motion or rest? And to this I answer: the motive for continuing in the same state or action is only the present satisfaction in it. The motive for change is always some uneasiness. Nothing sets us upon a change of state, or upon any new action, except some uneasiness. This is the great motive that works on the mind to put it into action. For brevity's sake we will call this determining the will, and I will explain it more fully.

2.21.30 *Will and desire must not be confounded.*—But on the way to that, I must first point out the following. Above, I have tried to express the act of volition by choosing, preferring, and similar terms. These signify desire as well as volition, but I used them for lack of other words to mark that action of the mind whose proper name is willing or volition. Yet it is a very simple act. So anyone who wants to understand what it is will find it better by reflecting on his own mind, and observing what it does when it wills, than by any variety of articulate sounds whatever. Some expressions do not sufficiently preserve the difference between the will and various acts of the mind that are quite distinct from it. I think this caution about not being misled by them is all the

more necessary, because I find the will often confused with several of the affections, especially desire, and the one put for the other. This is done even by men who would not like to be thought to have lacked very distinct notions of things, or to have written unclearly about them. This, I suspect, has been no small cause of obscurity and error in this matter, and so it should be avoided as far as possible. Let anyone turn his thoughts inward to what passes in his mind when he wills. He will see that the will, or power of volition, is concerned with nothing but that particular determination of the mind by which, simply by a thought, the mind tries to start, continue, or stop some action that it takes to be in its power. Well considered, this plainly shows that the will is perfectly distinct from desire. In the very same action, desire may have a tendency quite contrary to the one our will sets us on. A man I cannot refuse may oblige me to use arguments to persuade someone else. At the very time I am speaking, I may wish that they will not prevail on him. In this case it is plain that the will and desire run counter to each other. I will the action that tends one way, while my desire tends another, directly contrary way. Or consider a man who finds that a violent fit of gout in his limbs has relieved him of a drowsiness in his head, or a lack of appetite in his stomach. He desires to be relieved of the pain in his feet or hands too (for wherever there is pain there is a desire to be rid of it). Yet as long as he fears that removing the pain may shift the harmful humor to a more vital part, his will is never determined to any action that might serve to remove this pain.[41] From this it is evident that desiring and willing are two distinct acts of the mind. Consequently the will, which is only the power of volition, is even more distinct from desire.

41 In the humoral medicine of the time, gout was thought to draw a harmful fluid (a "humor") to the extremities and away from the vital organs.

UNEASINESS DETERMINES THE WILL

In his revised view, the most pressing uneasiness, not the greater good, determines the will.

2.21.31 *Uneasiness determines the will.*—To return, then, to the inquiry: what is it that determines the will with regard to our actions? On second thoughts, I am inclined to think it is not the greater good in view, as is generally supposed. It is some uneasiness a man is presently under, and for the most part the most pressing one. This is what determines the will, one time after another, and sets us on the actions we perform. This uneasiness we may call, as it is, desire, which is an uneasiness of the mind for the lack of some absent good. All pain of the body, of whatever sort, and all disquiet of the mind, is uneasiness. Desire is always joined with it, equal to the pain or uneasiness felt, and hardly distinguishable from it. For desire is nothing but an uneasiness at the lack of an absent good. With reference to any pain felt, ease is that absent good, and until that ease is attained we may call it desire. Nobody feels pain that he does not wish to be eased of, with a desire equal to that pain and inseparable from it. Besides this desire of ease from pain, there is another desire, of absent positive good. Here too the desire and the uneasiness are equal. As much as we desire any absent good, so much are we in pain for it. But here not every absent good causes pain equal to its greatness, whether real or acknowledged, in the way that every pain causes desire equal to itself. For the absence of good is not always a pain, as the presence of pain is. And so absent good may be looked at and considered without desire. But however much desire there is anywhere, there is that much uneasiness.

2.21.32 *Desire is uneasiness.*—Anyone who reflects on himself will quickly find that desire is a state of uneasiness. The wise man says of hope (which is not very different from desire) that "being deferred, it makes the heart sick." Who has not felt this in desire? And the sickness is always in proportion to the greatness

of the desire. Sometimes it raises the uneasiness to such a pitch that it makes people cry out, Give me children, give me the thing desired, or I die! Life itself, with all its enjoyments, is a burden that cannot be borne under the lasting and unrelieved pressure of such an uneasiness.[42]

2.21.33 *The uneasiness of desire determines the will.*—It is true that good and evil, present and absent, work on the mind. But what immediately determines the will, from time to time, to every voluntary action is the uneasiness of desire fixed on some absent good. That good may be negative, as freedom from pain is to someone in pain, or positive, as the enjoyment of pleasure. This uneasiness determines the will to the successive voluntary actions that make up the greatest part of our lives, and by which we are led through different courses to different ends. I will try to show this, both from experience and from the reason of the thing.

2.21.34 *This is the spring of action.*—When a man is perfectly content with the state he is in, that is, when he is entirely free of any uneasiness, what effort, what action, what will is left to him, except to continue in it? Every man's own observation will satisfy him of this. And so we see what our all-wise Maker has done, suitably to our constitution and makeup, and knowing what it is that determines the will. He has put into man the uneasiness of hunger and thirst, and other natural desires. These return in their seasons to move and determine people's wills, for their own preservation and the continuation of their species. These various uneasinesses carry us toward certain good ends. I think we may conclude that if the bare contemplation of those ends had been enough to determine the will and set us to work, we would have had none of these natural pains, and perhaps little or no pain at all in this world. "It is better to marry than to burn," says St. Paul. Here we may see what it is that chiefly drives men into the enjoyments of married life. A

42 The "wise man" is Solomon, traditionally the author of Proverbs (Proverbs 13:12). "Give me children, or else I die" is Rachel's cry in Genesis 30:1.

little burning that is felt pushes us more powerfully than greater pleasures in prospect draw or allure us.[43]

2.21.35 *The greatest positive good determines not the will, but uneasiness.*—By the general consent of all mankind, it seems an established and settled maxim that good, the greater good, determines the will. So I am not at all surprised that I took it for granted when I first published my thoughts on this subject. And I imagine many people will think me more excusable for having done so then than for having now ventured to depart from so widely received an opinion.[44] But upon a stricter inquiry I am forced to conclude otherwise. Good, the greater good, even when it is perceived and acknowledged to be so, does not determine the will until our desire, raised in proportion to it, makes us uneasy at the lack of it. Convince a man as much as you like that plenty has its advantages over poverty. Make him see and admit that the pleasant comforts of life are better than squalid want. Yet as long as he is content with the latter and finds no uneasiness in it, he does not move. His will is never determined to any action that would bring him out of it. Let a man be as thoroughly persuaded as you like of the advantages of virtue. Let him see that it is as necessary to a man who has any great aims in this world, or hopes in the next, as food is to life. Yet until he hungers and thirsts after righteousness, until he feels an uneasiness at the lack of it, his will will not be determined to any action in pursuit of this admittedly greater good. Instead, any other uneasiness he feels in himself will take its place and carry his will to other actions.[45] On the other side, let a drunkard see that his health is decaying and his estate wasting. Let him see that disgrace and diseases, and the lack of everything, even of his beloved drink, await him in the course he is following. Still, the recurring uneasiness of missing his companions, and the habitual thirst for his cups at the usual time, drive him to the tavern. He does

43 1 Corinthians 7:9.
44 In the first edition (1690) Locke held that the greater good determines the will; he rewrote much of this chapter for the second edition (1694).
45 "Hunger and thirst after righteousness": Matthew 5:6.

this though he has in view the loss of health and plenty, and perhaps of the joys of another life. The least of these is no small good. He admits it is far greater than the tickling of his palate with a glass of wine, or the idle chat of a drinking club. It is not for lack of seeing the greater good. He sees it and acknowledges it, and in the intervals between his drinking hours he will make resolutions to pursue the greater good. But when the uneasiness of missing his accustomed pleasure returns, the greater good he acknowledges loses its hold, and the present uneasiness determines his will to the accustomed action. That action thereby gains a stronger footing to prevail the next time. It does so even while he secretly promises himself that he will not do it again, and that this is the last time he will act against attaining those greater goods. And so from time to time he is in the state of that unhappy complainer: *video meliora proboque, deteriora sequor* ("I see the better and approve it; I follow the worse"). Everyone accepts this saying as true, and constant experience confirms it. It can easily be made intelligible in this way, and possibly in no other.[46]

2.21.36 *Because the removal of uneasiness is the first step to happiness.*—Experience makes it evident that uneasiness alone operates on the will and determines it in its choice. If we ask why this is so, we find the following. We are capable of only one determination of the will to one action at a time. So the present uneasiness we are under naturally determines the will, with a view to the happiness we all aim at in all our actions. For as long as we are under any uneasiness, we cannot think of ourselves as happy, or even on the way to happiness. Everyone concludes and feels that pain and uneasiness are inconsistent with happiness. They spoil the relish even of the good things we have, and a little pain is enough to mar all the pleasure we were rejoicing in. And therefore what naturally determines the choice of our will for the next action will always be the removal of pain, as long as we have any left. That is the first and necessary step toward happiness.

46 Ovid, *Metamorphoses* 7.20–21, spoken by Medea.

2.21.37 *Because uneasiness alone is present.*—Another reason why uneasiness alone determines the will may be this: it alone is present, and it is against the nature of things that what is absent should operate where it is not. It may be said that absent good can be brought home to the mind by contemplation and made present. The idea of it may indeed be in the mind and be viewed as present there. But nothing will be in the mind as a present good, able to outweigh the removal of any uneasiness we are under, until it raises our desire. It is the uneasiness of that desire which prevails in determining the will. Until then, the idea of any good in the mind is there only as other ideas are, as an object of bare, inactive speculation. It does not operate on the will or set us to work, for a reason I will show shortly. How many people there are who have had vivid representations of the unspeakable joys of heaven set before their minds, and who acknowledge those joys to be possible and even probable, yet would be content to settle for their happiness here! And so the prevailing uneasinesses of their desires, let loose in pursuit of the enjoyments of this life, take turns determining their wills. All the while they do not take one step, and are not moved one bit toward the good things of another life, however great they consider them to be.

2.21.38 *Because all who allow the joys of heaven possible, pursue them not.*—Suppose the will were determined by our view of good, according as it appears greater or less to the understanding when contemplated. That is the state of all absent good, and on the received opinion it is what the will is supposed to move toward and be moved by. If that were so, I do not see how the will could ever break loose from the infinite, eternal joys of heaven, once they had been proposed and considered as possible. For all absent good is only possible, not infallibly certain. Yet on this view absent good alone, merely by being proposed and coming into view, determines the will and so sets us on action. It would then be unavoidable that the infinitely greater possible good should regularly and constantly determine the will in all the successive actions it directs. We would then keep

constantly and steadily on our course toward heaven, never standing still and never directing our actions to any other end. The eternal condition of a future state infinitely outweighs the expectation of riches, honor, or any other worldly pleasure we can set before ourselves, even if we grant that these are more likely to be obtained. For nothing future is yet in our possession, and so even the expectation of these may deceive us. If it were true that the greater good in view determines the will, so great a good, once proposed, could not fail to seize the will and hold it fast to the pursuit of this infinitely greatest good, never letting it go again. For the will has power over the thoughts and directs them, as it does our other actions. So if this were the case, the will would hold the mind's contemplation fixed on that good.

But any great uneasiness is never neglected.—This would be the state of the mind, and the regular tendency of the will in all its determinations, if the will were determined by what is considered and seen to be the greater good. But experience plainly shows that this is not so. The good that is admitted to be infinitely the greatest is often neglected in order to satisfy the successive uneasiness of desires that chase trifles. The greatest acknowledged good, even an everlasting and unspeakable good, which has sometimes moved and affected the mind, does not hold the will steadily. Yet we see that any very great and prevailing uneasiness, once it has laid hold of the will, does not let it go. From this we may be convinced what it is that determines the will. Thus any intense bodily pain, the ungovernable passion of a man violently in love, or the impatient desire for revenge keeps the will steady and intent. The will, so determined, never lets the understanding set the object aside. All the thoughts of the mind and powers of the body are employed without interruption in that direction, by the determination of the will, influenced by that overriding uneasiness for as long as it lasts. From this it seems evident to me that the will, or the power of setting us on one action in preference to all others, is determined in us by uneasiness. Whether this is so, I ask everyone to observe in himself.

2.21.39 *Desire accompanies all uneasiness.*—So far I have mostly used the uneasiness of desire as my example of what determines the will, because it is the chief and most noticeable uneasiness. The will seldom orders any action, and no voluntary action is performed, without some desire accompanying it. I think this is why the will and desire are so often confused. Still, we should not regard the uneasiness that makes up, or at least accompanies, most of the other passions as wholly excluded here. Aversion, fear, anger, envy, shame, and so on each have their uneasiness too, and by it they influence the will. In actual life and practice, hardly any of these passions occurs simple and alone, wholly unmixed with others. In talk and reflection, though, the passion that operates most strongly and shows most in the present state of the mind usually gets the name. Indeed, I think hardly any passion is to be found without desire joined to it. I am sure that wherever there is uneasiness there is desire. For we constantly desire happiness, and however much uneasiness we feel, it is certain that we lack that much happiness, even in our own opinion, whatever our state and condition may otherwise be. Besides, since the present moment is not our eternity, we look beyond the present, whatever our enjoyment is. Desire goes along with our foresight, and it always carries the will with it. So even in joy itself, what keeps up the action on which the enjoyment depends is the desire to continue it and the fear of losing it. And whenever a greater uneasiness than that takes hold of the mind, the will is immediately determined by it to some new action, and the present delight is neglected.

2.21.40 *The most pressing uneasiness naturally determines the will.*—But in this world we are beset with various uneasinesses and pulled apart by different desires. So the next question, naturally, is which of them takes precedence in determining the will to the next action. The answer is: ordinarily, the most pressing of those that are judged capable of being removed at that time. For the will is the power of directing our active faculties to some action for some end, and so it can never be moved toward what is judged at that time to be unattainable. That would be to sup-

pose that an intelligent being deliberately acts for an end only to waste its labor, since that is what acting for something judged unattainable amounts to. And therefore very great uneasinesses do not move the will when they are judged incurable; in that case they do not set us on any effort. But setting these aside, the most important and urgent uneasiness we feel at a given time is what ordinarily determines the will, one step after another, in the train of voluntary actions that make up our lives. The greatest present uneasiness is the spur to action that we constantly feel, and for the most part it determines the will in its choice of the next action. For we must keep this in mind: the proper and only object of the will is some action of ours, and nothing else. By willing, we produce nothing but some action in our power. That is where the will terminates, and it reaches no further.

2.21.41 *All desire happiness.*—If it is further asked what moves desire, I answer: happiness, and that alone. Happiness and misery are the names of two extremes whose outermost bounds we do not know. It is what "eye has not seen, ear has not heard, nor has it entered into the heart of man to conceive." But of some degrees of both we have very vivid impressions, made by various instances of delight and joy on the one side, and of torment and sorrow on the other. For brevity's sake I will include these under the names of pleasure and pain, since there is pleasure and pain of the mind as well as of the body: "with him is fullness of joy, and pleasure forevermore." Or, to speak truly, they are all of the mind, though some arise in the mind from thought, and others in the body from certain modifications of motion.[47]

2.21.42 *Happiness, what.*—Happiness, then, in its full extent, is the utmost pleasure we are capable of, and misery the utmost pain. The lowest degree of what can be called happiness is that amount of ease from all pain, and that amount of present pleasure, without which a person cannot be content. Now pleasure and pain are produced in us, in different degrees, by the opera-

47 The quotations are from 1 Corinthians 2:9 and Psalm 16:11.

tion of certain objects on our minds or our bodies. Therefore what is apt to produce pleasure in us is what we call good, and what is apt to produce pain in us we call evil. We call them so for no other reason than their aptness to produce pleasure and pain in us, in which our happiness and misery consist. Further, although what is apt to produce any degree of pleasure is good in itself, and what is apt to produce any degree of pain is evil, we often do not call it so when it competes with something greater of its kind. For when they compete, the degrees of pleasure and pain rightly carry weight too. So if we want to estimate rightly what we call good and evil, we will find that it lies largely in comparison. The cause of every lesser degree of pain, as well as of every greater degree of pleasure, has the nature of good, and *vice versa*.

2.21.43 *What good is desired, what not.*—This is what is called good and evil, and all good is the proper object of desire in general. Yet not all good, even when it is seen and admitted to be good, necessarily moves every particular man's desire. It moves only that part of it, or that much of it, which he considers and takes to be a necessary part of his happiness. All other good, however great in reality or appearance, does not stir the desires of a man who does not regard it as part of the happiness with which, in his present thoughts, he can be satisfied. Happiness, understood in this way, is what everyone constantly pursues, and he desires whatever makes up any part of it. Other things, which he acknowledges to be good, he can look at without desire, pass by, and be content without. Nobody, I think, is so senseless as to deny that there is pleasure in knowledge. As for the pleasures of the senses, they have too many followers for anyone to question whether men are attracted by them. Now let one man place his satisfaction in sensual pleasures and another in the delight of knowledge. Each of them has to admit that there is great pleasure in what the other pursues. Yet since neither makes the other's delight part of his own happiness, their desires are not moved. Each is satisfied without what the other enjoys, and so his will is not determined to pursue it. But as soon as the studi-

ous man's hunger and thirst make him uneasy, things change. His will was never determined to any pursuit of fine food, piquant sauces, or delicious wines by the pleasant taste he has found in them. Yet by the uneasiness of hunger and thirst he is immediately determined to eating and drinking whatever wholesome food comes his way, perhaps with great indifference. And on the other side, the epicure buckles down to study when shame, or the desire to recommend himself to the woman he is courting, makes him uneasy at lacking some kind of knowledge. Thus, however earnest and constant men are in pursuit of happiness, they may have a clear view of good, great and admitted good, without being concerned for it or moved by it, if they think they can make up their happiness without it. Pain, however, always concerns them; they can feel no uneasiness without being moved. And so, since they are uneasy at lacking whatever is judged necessary to their happiness, as soon as any good appears to make up part of their share of happiness, they begin to desire it.

2.21.44 *Why the greatest good is not always desired.*—Anyone, I think, can observe in himself and others that the greater visible good does not always raise men's desires in proportion to the greatness it appears to have and is acknowledged to have. Yet every little trouble moves us and sets us to work to get rid of it. The reason is evident from the very nature of our happiness and misery. All present pain, whatever it is, makes up part of our present misery. But absent good does not at any time make up a necessary part of our present happiness, nor does its absence make up part of our misery. If it did, we would be constantly and infinitely miserable, since there are infinite degrees of happiness not in our possession. So once all uneasiness is removed, a moderate portion of good is enough for the present to content men. A few degrees of pleasure, in a succession of ordinary enjoyments, make up a happiness with which they can be satisfied. If this were not so, there could be no room for those indifferent and plainly trifling actions to which our wills are so often determined, and in which we voluntarily waste so much of our

lives. Such slackness could not possibly be consistent with a constant determination of the will or desire to the greatest apparent good. Few people, I think, need to look far from home to be convinced that this is so. Indeed, in this life there are not many whose happiness goes so far as to give them a constant train of moderate, modest pleasures without any mixture of uneasiness. And yet they would be content to stay here forever, though they cannot deny that there may possibly be a state of eternal, lasting joys after this life, far surpassing all the good to be found here. Indeed, they cannot help seeing that it is more possible than the attainment and continuation of the pittance of honor, riches, or pleasure they pursue, and for which they neglect that eternal state. Yet they have this difference in full view. They are satisfied that a perfect, secure, and lasting happiness in a future state is possible, and clearly convinced that it is not to be had here. Still, while they confine their happiness to some small enjoyment or aim of this life, and exclude the joys of heaven from making any necessary part of it, their desires are not moved by this greater apparent good, and their wills are not determined to any action or effort to attain it.

2.21.45 *Why not being desired, it moves not the will.*—The ordinary necessities of life fill a great part of it with the uneasiness of hunger, thirst, heat, cold, weariness from labor, sleepiness, and so on, in their constant returns. Add to these, besides accidental harms, the fanciful uneasinesses (such as the itch for honor, power, or riches) which habits acquired through fashion, example, and education have settled in us, and a thousand other irregular desires that custom has made natural to us. We will then find that very little of our life is so free of these uneasinesses as to leave us open to the attraction of more remote, absent good. We are seldom at ease, and seldom free enough from the solicitation of our natural or adopted desires. Instead, a constant succession of uneasinesses, drawn from the stock that natural wants or acquired habits have heaped up, take the will in their turns. No sooner is one action finished, which such a determination of the will set us on, than another uneasiness is

ready to set us to work. For removing the pains we feel and are pressed with at present is getting out of misery, and consequently the first thing to be done on the way to happiness. Absent good, though it is thought about, admitted, and appears to be good, does not make up any part of this unhappiness by its absence. So it is jostled aside to make way for the removal of the uneasinesses we feel. This lasts until due and repeated contemplation has brought it nearer to our mind, given us some relish for it, and raised some desire in us. That desire then begins to make up part of our present uneasiness, and stands on equal terms with the rest to be satisfied. And so, according to its greatness and pressure, it comes in its turn to determine the will.

2.21.46 *Due consideration raises desire.*—And so, by duly considering and examining any good proposed, it is in our power to raise our desires in due proportion to the value of that good. In this way, in its turn and place, it may come to work on the will and be pursued. For good, however great it appears and is admitted to be, does not reach our wills until it has raised desires in our minds and so made us uneasy at lacking it. Until then we are not within the sphere of its activity. Our wills are determined only by the uneasinesses present to us. These (while we have any) are always soliciting us and ready at hand to give the will its next determination. The weighing, when there is any in the mind, is only about which desire shall be satisfied next, which uneasiness removed first. As a result, as long as any uneasiness, any desire, remains in our mind, there is no room for good, merely as good, to reach the will or to determine it at all. For, as has been said, the first step in our efforts toward happiness is to get wholly out of the confines of misery and to feel no part of it. So the will can attend to nothing else until every uneasiness we feel is completely removed. And given the multitude of wants and desires that beset us in this imperfect state, we are not likely ever to be freed from them in this world.

SUSPENDING DESIRE

The mind can suspend its desires and examine them, and in this lies human liberty.

2.21.47 *The power to suspend the prosecution on any desire makes way for consideration.*—There are in us a great many uneasinesses, always soliciting us and ready to determine the will. It is natural, as I have said, that the greatest and most pressing should determine the will to the next action. And so it does for the most part, but not always. For in most cases, as experience makes evident, the mind has a power to suspend the execution and satisfaction of any of its desires, and so of all of them, one after another. It is then at liberty to consider their objects, examine them from all sides, and weigh them against others. This is where man's liberty lies. And from not using it rightly comes all that variety of mistakes, errors, and faults we fall into in the conduct of our lives and our efforts toward happiness, when we rush the determination of our wills and commit ourselves too soon, before due examination. To prevent this, we have a power to suspend the pursuit of this or that desire, as anyone can test in himself every day. This seems to me the source of all liberty. In this seems to consist what is called (improperly, I think) free will. For during this suspension of any desire, before the will is determined to action and the action that follows that determination is done, we have the opportunity to examine, view, and judge the good or evil of what we are about to do. And when we have judged upon due examination, we have done our duty, all that we can or ought to do in pursuit of our happiness. It is not a fault but a perfection of our nature to desire, will, and act according to the final result of a fair examination.

2.21.48 *To be determined by our own judgment, is no restraint to liberty.*—This is so far from being a restraint or reduction of freedom that it is the very improvement and benefit of it. It is not a curtailment; it is the end and use of our liberty. And the further we are removed from such a determination, the nearer we are to

misery and slavery. A perfect indifference in the mind, not determinable by its final judgment of the good or evil thought to attend its choice, would be far from an advantage and excellence in any intellectual nature. It would be as great an imperfection as the lack of indifference to act or not act, until determined by the will, would be on the other side. A man is at liberty to lift his hand to his head or let it rest; he is perfectly indifferent between the two. And it would be an imperfection in him if he lacked that power, if he were deprived of that indifference. But it would be just as great an imperfection if he had the same indifference about whether to prefer lifting his hand or leaving it at rest when lifting it would save his head or eyes from a blow he sees coming. It is as much a perfection that desire, or the power of preferring, should be determined by good as that the power of acting should be determined by the will. And the more certain such determination is, the greater the perfection. Indeed, if we were determined by anything other than the final result of our own minds, judging the good or evil of an action, we would not be free. For the very end of our freedom is that we may attain the good we choose. And therefore every man, by his constitution as an intelligent being, is under a necessity of being determined in willing by his own thought and judgment of what is best for him to do. Otherwise he would be under the determination of someone other than himself, which is lack of liberty. And to deny that a man's will, in every determination, follows his own judgment is to say that a man wills and acts for an end he does not want, at the very time he wills and acts for it. For if in his present thoughts he prefers it to anything else, he plainly thinks better of it at that moment and would have it before anything else. The only alternative is that he can have it and not have it, will it and not will it, at the same time, and that is a contradiction too obvious to be admitted.

2.21.49 *The freest agents are so determined.*—If we look at those superior beings above us who enjoy perfect happiness, we will have reason to judge that they are more steadily determined in their choice of good than we are. And yet we have no reason to

think they are less happy or less free than we are. And if it were fitting for such poor finite creatures as we are to pronounce on what infinite wisdom and goodness could do, I think we might say that God himself cannot choose what is not good. The freedom of the Almighty does not prevent his being determined by what is best.

2.21.50 *A constant determination to a pursuit of happiness no abridgment of liberty.*—But to give a right view of this misunderstood part of liberty, let me ask: "Would anyone choose to be severely intellectually disabled, because such a person is less determined by wise considerations than a wise man is? Is it worth the name of freedom to be at liberty to play the fool and bring shame and misery on oneself?" If breaking loose from the guidance of reason, and lacking the restraint of examination and judgment that keeps us from choosing or doing the worse, is liberty, true liberty, then the mentally ill and fools are the only free men. But I think nobody would choose to lose his mind for the sake of such liberty, except someone who has already lost it. The constant desire for happiness, and the constraint it puts on us to act for it, nobody, I think, counts as a curtailment of liberty, or at least not one worth complaining about. God Almighty himself is under the necessity of being happy, and the more any intelligent being is so, the nearer it approaches infinite perfection and happiness. So that we shortsighted creatures, in this state of ignorance, might not mistake true happiness, we have been given a power to suspend any particular desire and keep it from determining the will and engaging us in action. This is standing still where we are not sure enough of the way. Examination is consulting a guide. The determination of the will after inquiry is following that guide's direction. And whoever has the power to act or not act as such a determination directs is a free agent; such determination does not curtail the power in which liberty consists. A man whose chains have been knocked off, and for whom the prison doors have been thrown open, is perfectly at liberty, because he may either go or stay as he likes best. This holds even if his preference is determined to stay by

the darkness of the night, or bad weather, or lack of other lodging. He does not cease to be free, even though the desire for some convenience to be had there absolutely determines his preference and makes him stay in his prison.

2.21.51 *The necessity of pursuing true happiness the foundation of liberty.*—The highest perfection of intellectual nature, then, lies in a careful and constant pursuit of true and solid happiness. Correspondingly, the care we take not to mistake imaginary happiness for real happiness is the necessary foundation of our liberty. The stronger the ties that bind us to an unalterable pursuit of happiness in general, which is our greatest good and which our desires, as such, always follow, the freer we are from any necessary determination of our will to a particular action. We are also freer from a necessary compliance with our desire when it is set on some particular good that appears preferable at the time, until we have duly examined whether it tends toward our real happiness or is inconsistent with it. And therefore, until we are as well informed on this question as the weight of the matter and the nature of the case require, we are obliged, by the necessity of preferring and pursuing true happiness as our greatest good, to suspend the satisfaction of our desires in particular cases.

2.21.52 *The reason of it.*—This is the hinge on which the liberty of intellectual beings turns, in their constant efforts toward, and steady pursuit of, true happiness: they can suspend this pursuit in particular cases until they have looked ahead and informed themselves whether the particular thing then proposed or desired lies on the way to their main end and makes up a real part of their greatest good. For the inclination and tendency of their nature toward happiness is an obligation and motive for them to take care not to mistake or miss it. And so it necessarily makes them cautious, deliberate, and wary in directing their particular actions, which are the means of obtaining it. Whatever necessity determines us to pursue real bliss, that same necessity, with the same force, establishes suspension, deliberation, and scrutiny of each successive desire, to see

whether satisfying it interferes with our true happiness and leads us away from it. This, it seems to me, is the great privilege of finite intellectual beings. I ask that it be carefully considered whether the great entrance to, and exercise of, all the liberty men have, are capable of, or can find useful, and that on which the course of their actions depends, does not lie in this: that they can suspend their desires and stop them from determining their wills to any action until they have duly and fairly examined its good and evil, as far as the weight of the matter requires. This we are able to do. And when we have done it, we have done our duty and all that is in our power, and indeed all that is needed. For since the will presupposes knowledge to guide its choice, all we can do is hold our wills undetermined until we have examined the good and evil of what we desire. What follows after that follows in a chain of consequences linked one to another, all depending on the final determination of the judgment. Whether that determination is made on a hasty and rash view or on a due and mature examination is in our power, since experience shows us that in most cases we are able to suspend the present satisfaction of any desire.

2.21.53 *Government of our passions the right improvement of liberty.* —But sometimes some extreme disturbance takes possession of our whole mind, as when the pain of the rack, or an impetuous uneasiness such as love, anger, or any other violent passion, runs away with us. It leaves us no liberty of thought, and we are not masters enough of our own minds to consider thoroughly and examine fairly. In such a case God, who knows our frailty, pities our weakness, requires of us no more than we are able to do, and sees what was and what was not in our power, will judge as a kind and merciful father. But a right direction of our conduct toward true happiness depends on refraining from too hasty a compliance with our desires, and on moderating and restraining our passions, so that our understandings may be free to examine and reason may give its judgment without bias. It is here that we should employ our chief care and effort. Here we should take pains to fit the relish of our minds to the true

intrinsic good or ill in things. We should not let a great and weighty good, admitted or supposed to be possible, slip out of our thoughts without leaving any relish for it, any desire for it, there. We should keep it in view until, by due consideration of its true worth, we have formed appetites in our minds suited to it, and made ourselves uneasy at lacking it or at the fear of losing it. And how far this is in everyone's power, by making resolutions he is able to keep, anyone can easily try for himself. Nor let anyone say that he cannot govern his passions, or stop them from breaking out and carrying him into action. For what he can do in front of a prince or a great man, he can do alone, or in the presence of God, if he wants to.

WHY MEN CHOOSE ILL

Men place happiness in different things, and wrong judgments of future good lead them astray.

2.21.54 *How men come to pursue different courses.*—From what has been said, it is easy to explain how it happens that, though all men desire happiness, their wills carry them in such opposite directions, and some of them therefore do what is evil. To this I say that the various and contrary choices men make in the world do not show that they are not all pursuing good. They show that the same thing is not equally good for every man. This variety of pursuits shows that not everyone places his happiness in the same thing, or chooses the same way to it. If all of man's concerns ended with this life, then the reason why one man followed study and knowledge and another hawking and hunting, why one chose luxury and debauchery and another sobriety and riches, would not be that some of them were not aiming at their own happiness. It would be that their happiness was placed in different things. And so the physician gave the right answer to his patient with sore eyes: "If you get more pleasure from the taste of wine than from the use of your sight, wine is good for you. But if the pleasure of seeing is greater to you than that of drinking, wine is bad for you."

2.21.55 The mind has different tastes, just as the palate does. You will try in vain to delight all men with riches or glory (in which some men do place their happiness), just as you would try in vain to satisfy all men's hunger with cheese or lobster. These are very agreeable and delicious fare to some, but to others extremely nauseating and offensive. And many people would, with reason, prefer the pangs of an empty stomach to those dishes that are a feast to others. This is why, I think, the philosophers of old inquired in vain whether the *summum bonum*, the highest good, consisted in riches, or bodily delights, or virtue, or contemplation. They might just as reasonably have argued over whether the best taste was to be found in apples, plums, or nuts, and split into sects over it. For pleasant tastes do not depend on the things themselves but on their agreeableness to this or that particular palate, and palates vary greatly. In the same way, the greatest happiness consists in having the things that produce the greatest pleasure, and in the absence of those that cause any disturbance, any pain. And to different men these are very different things. If, therefore, men have hope in this life only, if they can enjoy only in this life, it is neither strange nor unreasonable that they should seek their happiness by avoiding everything that troubles them here and pursuing everything that delights them. And it will be no wonder to find variety and difference in this. For if there is no prospect beyond the grave, the inference is certainly right: "let us eat and drink," let us enjoy what we delight in, "for tomorrow we shall die." This, I think, may serve to show us why, though all men's desires tend toward happiness, they are not moved by the same object.[48] Men may choose different things and yet all choose rightly, if we suppose them to be only like a swarm of poor insects. Some of them are bees, delighted with flowers and their sweetness; others are beetles, delighted with other kinds of food. Having enjoyed these for a season, they would cease to be, and would exist no more forever.

2.21.56 *How men come to choose ill.*—These things, duly weighed, will, I think, give us a clear view of the state of human liberty. Liberty, it is plain, consists in a power to do or not to do: to do, or to forbear doing, as we will. This cannot be denied. But since this seems to cover only the actions a man performs following volition, it is further asked "whether he is at liberty to will or not." To this it has been answered that in most cases a man is not at liberty to forbear the act of volition. He must exert an act of his will, by which the proposed action is made to exist or not to exist. But there is one case in which a man is at liberty with respect to willing, and that is in choosing a remote good as an end to be pursued. Here a man may suspend his choice from being determined for or against the thing proposed until he has examined whether it really is, in its own nature and consequences, such as to make him happy. For once he has chosen it, and it has thereby become a part of his happiness, it raises desire. That desire gives him a proportionate uneasiness, which determines his will and sets him to work pursuing his choice on every occasion that offers. And here we can see how a man may justly incur punishment, even though it is certain that in every particular action he wills, he does, and necessarily does, will what he then judges to be good. His will is always determined by what his understanding judges good, but that does not excuse him. By a too hasty choice of his own making he has imposed on himself wrong measures of good and evil. However false and deceptive these measures are, they have the same influence on all his future conduct as if they were true and right. He has spoiled his own palate, and must answer to himself for the sickness and death that follow from it. The eternal law and nature of things is not to be altered to suit his badly ordered choice. If his neglect or abuse of the liberty he had to examine what would really and truly make for his happiness misleads him, the failures that follow must be charged to his own choosing. He had a power to suspend his determination. It was given him so that he might examine and take care of his own happiness, and see to it

48 Echoes of 1 Corinthians 15:19 and 15:32 (itself quoting Isaiah 22:13).

that he was not deceived. And he could never judge that it was better to be deceived than not, in a matter of such great and immediate concern.

What has been said may also show us why men in this world prefer different things and pursue happiness by opposite courses. Yet men are always constant and in earnest in matters of happiness and misery, so the question still remains: how do men so often come to prefer the worse to the better, and to choose what, by their own admission, has made them miserable?

2.21.57 All men aim at being happy, yet they take various and opposite ways. To account for this, we must consider where the various uneasinesses that determine the will in preferring each voluntary action come from.

From bodily pains.—1. Some of them come from causes not in our power, as bodily pains often do: from want, from disease, or from outward injuries such as the rack. When these are present and violent, they mostly act forcibly on the will. They turn the course of men's lives away from virtue, piety, and religion, and from what those men had earlier judged to lead to happiness. For not everyone makes the effort, or, from lack of practice, is able, to raise in himself desires for remote and future good by contemplating it. He needs desires strong enough to counterbalance the uneasiness he feels in those bodily torments, and to keep his will steady in choosing the actions that lead to future happiness. A neighboring country has lately been a tragic stage from which we could draw instances, if any were needed. None are needed, since the world in every country and age furnishes examples enough to confirm the familiar observation "*necessitas cogit ad turpia*" (necessity drives men to shameful things). And so we have great reason to pray, "Lead us not into temptation."[49]

From wrong desires arising from wrong judgment.—Other uneasinesses arise from our desires for absent good. These desires are

49 The neighboring country is France, where Protestants were persecuted and forced to convert after the revocation of the Edict of Nantes in 1685. The prayer is from the Lord's Prayer (Matthew 6:13).

always proportioned to, and depend on, the judgment we make of any absent good and the taste we have for it. In both of these we are apt to be misled in various ways, and by our own fault.

2.21.58 *Our judgment of present good or evil always right.*—2. First I shall consider the wrong judgments men make of future good and evil, by which their desires are misled. As to present happiness and misery, when that alone is taken into account and consequences are entirely set aside, a man never chooses wrongly. He knows what pleases him best, and that is what he actually prefers. Things in present enjoyment are what they seem. In this case the apparent good and the real good are always the same. The pain or pleasure is exactly as great as it is felt to be, and no greater, so the present good or evil really is as much as it appears. So if every action of ours were complete in itself and drew no consequences after it, we would undoubtedly never err in our choice of good. We would always infallibly prefer the best. If the pains of honest work and the pains of starving from hunger and cold were set before us side by side, nobody would be in doubt which to choose. If the satisfaction of a lust and the joys of heaven were offered together for anyone's present possession, he would not hesitate or err in making his choice.

2.21.59 But our voluntary actions do not carry with them, at the moment we perform them, all the happiness and misery that depend on them. They are the prior causes of good and evil, which they draw after them and bring upon us when they themselves are past and gone. So our desires look beyond our present enjoyments and carry the mind out toward absent good, according to how necessary we think that good is for making or increasing our happiness. It is our opinion of this necessity that gives absent good its attraction. Without that opinion, absent good does not move us. Consider the narrow allowance of capacity that we are used to and aware of here. We enjoy only one pleasure at a time, and that pleasure, once all uneasiness is gone, is enough while it lasts to make us think ourselves happy. In this condition it is not every remote good, not even every visible good, that affects us. Our freedom from pain and our

present enjoyment are enough for our present happiness, so we do not wish to risk a change. We judge that we are already happy, being content, and that is enough, for whoever is content is happy. But as soon as some new uneasiness comes in, this happiness is disturbed, and we are set to work afresh in the pursuit of happiness.

2.21.60 *From a wrong judgment of what makes a necessary part of their happiness.*—So men's readiness to conclude that they can be happy without it is one great reason why they often are not stirred to desire the greatest absent good. While such thoughts possess them, the joys of a future state do not move them, and they feel little concern or uneasiness about them. The will, free from being determined by such desires, is left to pursue nearer satisfactions, and to remove the uneasinesses it then feels in lacking and longing for them. Only change a man's view of these things. Let him see that virtue and religion are necessary to his happiness. Let him look into the future state of bliss or misery and see there God, the righteous judge, ready "to render to every man according to his deeds: to them who by patient continuance in well-doing seek for glory and honor and immortality, eternal life; but unto every soul that does evil, indignation and wrath, tribulation and anguish." Such a man has in view the different states of perfect happiness or misery that await all men after this life, depending on how they behave here. For him, I say, the measures of good and evil that govern his choice are greatly changed.[50] No pleasure or pain in this life can bear any proportion to the endless happiness or extreme misery of an immortal soul hereafter. So the actions in his power will be preferred according to how well they serve to secure that perfect, lasting happiness hereafter, and not according to the passing pleasure or pain that accompanies or follows them here.

2.21.61 *A more particular account of wrong judgments.*—Men are all in earnest pursuit of happiness, yet they often bring misery on themselves. To account for this more particularly, we must consider how things come to be presented to our desires under

50 Romans 2:6–9.

deceptive appearances. That happens when the judgment pronounces wrongly about them. To see how far this reaches, and what the causes of wrong judgment are, we must remember that things are judged good or bad in two senses.

First, what is properly good or bad is nothing but simply pleasure or pain.

Second, present pleasure and pain are not the only proper objects of our desires. Whatever is apt, by its effect or consequences, to bring pleasure or pain upon us at a distance is also a proper object of desire, and is apt to move a creature that has foresight. So things that draw pleasure and pain after them are also considered good and evil.

2.21.62 The wrong judgment that misleads us, and often makes the will fasten on the worse side, lies in giving a false report of the various comparisons among these. The wrong judgment I am speaking of here is not what one man may think of another's determination. It is what every man must himself admit to be wrong. I take it as a sure foundation that every intelligent being really seeks happiness, which consists in the enjoyment of pleasure without any considerable mixture of uneasiness. So it is impossible that anyone should willingly put a bitter ingredient into his own drink, or leave out anything in his power that would contribute to his satisfaction and the completion of his happiness, except through wrong judgment. I shall not speak here of the mistake that results from invincible error, which hardly deserves the name of wrong judgment. I shall speak of the wrong judgment that every man must himself admit to be so.

2.21.63 *In comparing present and future.*—As to present pleasure and pain, then, the mind, as has been said, never mistakes what is really good or evil. The greater pleasure or the greater pain really is just as it appears. Present pleasure and pain show their difference and degrees so plainly that they leave no room for mistake. But we often judge wrongly when we compare present pleasure or pain with future pleasure or pain, which is usually the case in the most important determinations of the will. We

take their measure from different distances. Objects near at hand tend to be thought larger than bigger ones farther away, and so it is with pleasures and pains. The present tends to win, and those at a distance are at a disadvantage in the comparison. So most men, like spendthrift heirs, tend to judge a little in hand better than a great deal to come. For small things they possess now, they give up greater things they would come into later. But everyone must allow that this is a wrong judgment, whatever his pleasure may consist in. What is future will certainly become present. Then, having the same advantage of nearness, it will show itself in its full size, and it will expose the willful mistake of the man who judged it by unequal measures. Suppose the pleasure of drinking were accompanied, the very moment a man empties his glass, by the sick stomach and aching head that in some men are sure to follow not many hours later. On those terms, I think, nobody would ever let wine touch his lips, however much pleasure he took in drinking. Yet he swallows it daily, and the bad side is chosen only through the illusion created by a small difference in time. If pleasure or pain can be so diminished merely by being a few hours away, it will be diminished far more by a greater distance. That is the case for a man who will not do by right judgment what time will do—that is, bring it home to himself, consider it as present, and take its true measure there! This is how we usually deceive ourselves with regard to simple pleasure and pain, or the true degrees of happiness or misery. The future loses its proper proportion, and what is present wins the preference as the greater. I am not speaking here of the wrong judgment by which absent things are not merely diminished but reduced to nothing at all. That happens when men enjoy what they can in the present and make sure of that, wrongly concluding that no evil will follow from it. That judgment does not lie in comparing the size of future good and evil, which is what we are speaking of here. It is another sort of wrong judgment, one about good or evil considered as the cause and source of the pleasure or pain that will follow from it.

2.21.64 *Cause of this.*—When we compare our present pleasure or pain with future pleasure or pain, we judge wrongly. The cause of this seems to me to be the weak and narrow constitution of our minds. We cannot well enjoy two pleasures at once, and still less can we enjoy almost any pleasure while pain possesses us. The present pleasure, unless it is very faint and almost nothing at all, fills our narrow souls. It takes up the whole mind so completely that it hardly leaves any thought of absent things. Some of our pleasures may not be strong enough to shut out the consideration of things at a distance. But we have such a great horror of pain that a little of it extinguishes all our pleasure: a little bitterness mixed into our cup leaves no taste of the sweet. Hence we want to be rid of the present evil at any cost, and we tend to think that nothing absent can equal it. While the present pain lasts, we find ourselves incapable of even the slightest degree of happiness. Men's daily complaints are loud proof of this. The pain anyone actually feels is always the worst of all, and it is in anguish that they cry out, "Anything rather than this! Nothing can be as unbearable as what I am suffering now." And so all our efforts and thoughts are bent on getting rid of the present evil before anything else, whatever may follow, as the first necessary condition of our happiness. Nothing, as we passionately think, can exceed or even nearly equal the uneasiness that weighs so heavily on us. Abstaining from a present pleasure that offers itself is a pain, and it is often a very great one when desire is inflamed by a near and tempting object. So it is no wonder that this abstinence acts in the same way pain does. It shrinks the future in our thoughts, and so forces us, as it were, blindfold into the pleasure's embrace.

2.21.65 Add to this that absent good, which is the same thing as future pleasure, is seldom able to counterbalance any present uneasiness, whether of pain or of desire. This is especially so if the good is of a kind we are unacquainted with. Its greatness is no more than what will actually be tasted when it is enjoyed, so men are ready enough to shrink it until it gives way to any present desire. They tell themselves that when it comes to the

test it may not live up to the report or opinion generally held of it. They have often found that things others have praised, and even things they themselves once enjoyed with great pleasure and delight, have turned out tasteless or sickening at another time. And so they see nothing in it for which they should give up a present enjoyment. But they must admit that this is a false way of judging when it is applied to the happiness of another life, unless they will say, "God cannot make happy those he intends to be happy." That life is intended to be a state of happiness, so it must certainly be agreeable to everyone's wish and desire. Even if we supposed that tastes there were as different as they are here, the manna in heaven will suit everyone's palate. So much for the wrong judgment we make of present and future pleasure and pain when they are compared together, and the absent is thus considered as future.[51]

2.21.66 *In considering consequences of actions.*—Some things are good or bad in their consequences, through their tendency to bring us good or evil in the future. About these we judge wrongly in several ways.

1. We judge wrongly when we judge that less evil depends on them than in truth does.

2. We judge wrongly when we judge that, although the consequence is that important, it is not so certain that it could not turn out otherwise. We may also judge that it could be avoided by some means, such as effort, skill, change, repentance, and so on. It would be easy to show that each of these is a wrong way of judging, if I examined each of them at length. But I shall only mention this in general, namely that it is a very wrong and irrational way to proceed to risk a greater good for a lesser one on uncertain guesses. It is especially so before we have made an examination proportioned to the weight of the matter and to how much it concerns us not to be mistaken. This, I think, everyone must admit, especially if he considers the usual causes of this wrong judgment. Some of them are the following:

51 Alluding to the tradition that the manna given to the Israelites suited every taste (Wisdom 16:20–21).

2.21.67 *Causes of this.*—1. Ignorance. He who judges without informing himself as fully as he is able cannot clear himself of judging wrongly.

2. Inadvertence, when a man overlooks even what he does know. This is a willful and present ignorance, and it misleads our judgments as much as the other kind. Judging is, as it were, balancing an account and determining on which side the balance lies. Suppose either side is hurried through in haste, and several of the sums that should have gone into the reckoning are overlooked and left out. Then this rashness causes as wrong a judgment as complete ignorance would. What most commonly causes it is the dominance of some present pleasure or pain, heightened by our feeble, passionate nature, which is most strongly worked on by what is present. Our understanding and reason were given us to check this rashness, if we will make right use of them to search and see, and then to judge accordingly. Without liberty the understanding would serve no purpose, and without understanding, liberty (if it could exist) would mean nothing. Suppose a man sees what would do him good or harm, what would make him happy or miserable, but cannot move himself one step toward it or away from it. What is he the better for seeing? And suppose a man is at liberty to wander in perfect darkness. How is his liberty any better than if he were blown up and down like a bubble by the force of the wind? Whether we are moved by a blind impulse from outside or from inside makes little difference. The first and great use of liberty, therefore, is to prevent blind rashness. The chief exercise of freedom is to stand still, open our eyes, look around, and take a view of the consequences of what we are about to do, as far as the weight of the matter requires. Sloth and negligence, heat and passion, the sway of fashion, and acquired bad dispositions each contribute on occasion to these wrong judgments. How much each contributes I shall not inquire further here. I shall only add one other false judgment. I think it necessary to mention it because it has great influence, though perhaps it is little noticed.

2.21.68 *Wrong judgment of what is necessary to our happiness.*—All men desire happiness; that is beyond doubt. But, as has already been observed, once they are rid of pain they tend to settle for any pleasure at hand, or one that custom has made dear to them, and to rest satisfied with it. So they are happy until some new desire makes them uneasy, disturbs that happiness, and shows them that they are not happy after all. Until then they look no further, and the will is not determined to any action in pursuit of any other known or apparent good. We find that we cannot enjoy every sort of good, since one excludes another. So we do not fix our desires on every apparent greater good unless it is judged necessary to our happiness. If we think we can be happy without it, it does not move us. This is another occasion for men to judge wrongly, namely when they do not take to be necessary to their happiness what really is so. This mistake misleads us both in the choice of the good we aim at and, very often, in the means to it, when it is a remote good. Whichever way it happens, the man who misses his great end, happiness, will admit that he did not judge right. He may have placed happiness where it really is not, or he may have neglected the means as unnecessary to it. What contributes to this mistake is the real or supposed unpleasantness of the actions that are the way to this end. It seems so absurd to men to make themselves unhappy for the sake of happiness that they do not easily bring themselves to it.

2.21.69 *We can change the agreeableness or disagreeableness in things.*—The last question on this subject, then, is "whether it is in a man's power to change the pleasantness and unpleasantness that accompany any sort of action." It is plain that in many cases he can. Men can, and should, correct their palates and give a taste to what has none, or is supposed to have none. The taste of the mind is as various as that of the body, and like the body's it can be altered. Some think that men cannot turn the displeasure or indifference they find in actions into pleasure and desire. That is a mistake, if men will only do what is in their power. Due consideration will do it in some cases, and practice, application,

and custom will do it in most. Bread or tobacco may be neglected because of indifference or distaste for them, even where they are shown to be good for health. Reason and consideration first recommend them and begin the trial, and then use finds them pleasant, or custom makes them so. That the same is true of virtue is quite certain. Actions are pleasing or displeasing either in themselves, or considered as a means to a greater and more desirable end. Eating a well-seasoned dish that suits a man's palate may move the mind by the delight that goes with eating, without reference to any other end. To this the thought of the pleasure there is in health and strength, which that food serves, may add a new relish, one strong enough to make us swallow even a nasty-tasting medicine. In the second case, an action is made more or less pleasing only by contemplating the end, and by being more or less persuaded of its tendency toward that end or its necessary connection with it. But the pleasure of the action itself is best acquired or increased by use and practice. Trying things often reconciles us to what we looked on with aversion from a distance. Repetition wears us into a liking for what perhaps displeased us at the first attempt. Habits have powerful charms, and they put strong attractions of ease and pleasure into what we accustom ourselves to. Habitual practice fits certain actions to us and thereby recommends them to us, and then we cannot keep from doing them, or at least cannot be easy in omitting them. This is very evident, and everyone's experience shows him that he can do it. Yet this part of men's conduct toward their happiness is so neglected that it may be received as a paradox if one says that men can make things or actions more or less pleasing to themselves. By doing so they could remedy something to which a great deal of their straying may justly be blamed. Fashion and common opinion have established wrong notions, and education and custom have established bad habits. So the true values of things are misplaced, and men's palates are corrupted. Pains should be taken to correct these. Contrary habits will change our pleasure and give us a taste for what is necessary or conducive to our happiness.

Everyone must admit that he can do this. When happiness is lost and misery overtakes him, he will admit that he did wrong in neglecting it, and he will condemn himself for it. And I ask everyone whether he has not often done so.

2.21.70 *Preference of vice to virtue a manifest wrong judgment.*—I shall not now enlarge any further on the wrong judgments by which men mislead themselves, or on their neglect of what is in their power. That would fill a volume, and it is not my business. False notions, or shameful neglect of what is in their power, may lead men off the road to happiness and scatter them, as we see, into very different courses of life. Whatever the cause, this at least is certain: morality, established on its true foundations, cannot fail to determine the choice of anyone who will only consider. And he who will not be so far a rational creature as to reflect seriously on infinite happiness and misery must condemn himself for not making the use of his understanding that he should. The Almighty has established the rewards and punishments of another life to enforce his law. They are weighty enough to determine the choice against whatever pleasure or pain this life can offer, even when the eternal state is considered only as a bare possibility, which nobody can doubt. Suppose someone grants only that exquisite and endless happiness is a possible consequence of a good life here, and that the opposite state is a possible reward of a bad one. He must then admit that he judges very wrongly if he does not prefer a virtuous life to a vicious one. The virtuous life carries the certain expectation of everlasting bliss, which may come. The vicious life carries the fear of that dreadful state of misery which may very possibly overtake the guilty, or at best the terrible, uncertain hope of annihilation. This is evidently so even if the virtuous life here held nothing but pain and the vicious life nothing but continual pleasure. For the most part it is quite otherwise. Wicked men have not much advantage to boast of even in what they possess now. Indeed, all things rightly considered, they have, I think, the worst of it even here. But put infinite happiness in one scale and infinite misery in the other. If the pious man is mistaken,

the worst that can come to him is the best that the wicked man can attain if he is right. Who could take that risk without madness?[52] Who in his right mind would choose to put himself within the possibility of infinite misery, when there is nothing to be gained by the risk even if he escapes it? On the other side, the sober man risks nothing, and there is infinite happiness to be gained if his expectation comes true. If the good man is right, he is eternally happy. If he is mistaken, he is not miserable; he feels nothing. On the other hand, if the wicked man is right, he is not happy. If he is mistaken, he is infinitely miserable. A judgment that does not see at once which side is to be preferred in this case must surely be a most obvious wrong judgment. I have refrained from saying anything about the certainty or probability of a future state. My purpose here is to show a wrong judgment that anyone must admit he makes on his own principles, however he sets them up. He makes it if he prefers the short pleasures of a vicious life on any consideration, while he knows, and cannot help being certain, that a future life is at least possible.

RECAPITULATION

Locke summarizes his revised account of liberty and ends with active and passive powers.

2.21.71 *Recapitulation.*—To conclude this inquiry into human liberty: I myself feared from the beginning that the chapter, as it stood before, contained some mistake. Since its publication a very judicious friend of mine suspected the same, though he could not point out the mistake to me specifically. So I was led to review this chapter more strictly. In doing so I came upon a very slight and hardly noticeable slip I had made, in putting one seemingly neutral word for another. That discovery opened up to me the present view, which I here submit to the learned world in this second edition. In short it is this: "Liberty is a power to act or not to act, according as the mind directs." A

52 The argument resembles Pascal's wager in his *Pensées* (1670).

power to direct the operative faculties to motion or rest in particular instances is what we call the will.[53] In the course of our voluntary actions, what determines the will to any change of operation is some present uneasiness. That uneasiness is the uneasiness of desire, or is at least always accompanied by it. Desire is always moved by evil, so as to flee it, because complete freedom from pain is always a necessary part of our happiness. But not every good, not even every greater good, constantly moves desire, because it may not be, or may not be taken to be, a necessary part of our happiness. For all we desire is simply to be happy. This general desire for happiness operates constantly and invariably. But the satisfaction of any particular desire can be suspended from determining the will to any action that serves it. It can be suspended until we have maturely examined whether the particular apparent good we then desire is part of our real happiness, or is consistent or inconsistent with it. The result of our judgment on that examination is what finally determines the man. He could not be free if his will were determined by anything but his own desire, guided by his own judgment. I know that some place liberty in an indifference of the man prior to the determination of his will. Those who lay so much stress on this prior indifference, as they call it, should have told us plainly whether this supposed indifference comes before the thought and judgment of the understanding, as well as before the decree of the will. I wish they had. For it is rather hard to place it between the two—that is, immediately after the judgment of the understanding and before the determination of the will—because the determination of the will follows the judgment of the understanding immediately. And to place liberty in an indifference prior to the thought and judgment of the understanding seems to me to place liberty in a state of darkness, in which we can neither see nor say anything about it. At least it places liberty in a subject incapable of it, since no agent is allowed to be capable of liberty except as a consequence of thought and judgment. I am not fussy about phrases, and so I

53 The friend was William Molyneux.

agree to say, with those who like to talk that way, that liberty is placed in indifference. But it is an indifference that remains after the judgment of the understanding, and even after the determination of the will. And that is an indifference not of the man (for once he has judged which is best, namely to do or to forbear, he is no longer indifferent) but of the man's operative powers. After the decree of the will, these powers remain as able to operate or to forbear operating as they were before. So they are in a state that may, if one likes, be called indifference. As far as this indifference reaches, a man is free, and no further. For example, I have the ability to move my hand or to let it rest. That operative power is indifferent to moving or not moving my hand, and in that respect I am then perfectly free. My will determines that operative power to rest. I am still free, because the indifference of my operative power to act or not to act still remains. The power of moving my hand is not in the least impaired by the determination of my will, which at present orders rest. The indifference of that power to act or not to act is just as it was before. This will appear if the will puts it to the test by ordering the contrary. But suppose that while my hand is at rest it is seized by a sudden paralysis. Then the indifference of that operative power is gone, and my liberty with it. I no longer have freedom in that respect, but am under a necessity of letting my hand rest. On the other hand, suppose my hand is set in motion by a convulsion. Then the indifference of that operative faculty is taken away by that motion, and my liberty in that case is lost, for I am under a necessity of having my hand move. I have added this to show the sort of indifference in which liberty seems to me to consist. It does not consist in any other, real or imaginary.

2.21.72 True notions about the nature and extent of liberty are so important that I hope I will be pardoned for this digression, into which my attempt to explain it has led me. The ideas of will, volition, liberty, and necessity came naturally in my way in this chapter on power. In an earlier edition of this treatise I gave an account of my thoughts about them, according to the light I then

had. Now, as a lover of truth and not a worshiper of my own doctrines, I acknowledge some change in my opinion, and I think I have found grounds for it. In what I first wrote, I followed truth with unbiased impartiality wherever I thought she led me. But I am neither so vain as to imagine myself infallible nor so dishonest as to hide my mistakes for fear of damaging my reputation. So, with the same sincere aim at truth alone, I have not been ashamed to publish what a stricter inquiry has suggested. It is not impossible that some may think my former notions right, some (as I have already found) these later ones, and some neither. I shall not be at all surprised at this variety in men's opinions. Impartial deductions of reason on disputed points are rare, and exact ones about abstract notions are not very easy, especially if they are at all long. And so I would think myself not a little indebted to anyone who, on these or any other grounds, would fairly clear this subject of liberty of whatever difficulties may still remain.

Before I close this chapter, it may serve our purpose, and help give us clearer conceptions of power, if we survey action a little more exactly. I said above that we have ideas of only two sorts of action, namely motion and thinking. In truth, though these are called and counted actions, if we look at them closely we will find that they are not always perfectly so. For, unless I am mistaken, there are instances of both kinds that, on due consideration, will turn out to be passions rather than actions. To that extent they are merely the effects of passive powers in those subjects, even though those subjects are thought of as agents on their account. For in these instances, the substance that has motion or thought receives the impression, being put into that action purely from outside. So it acts merely by the capacity it has to receive such an impression from some external agent. A power like that is not properly an active power but a mere passive capacity in the subject. Sometimes the substance or agent puts itself into action by its own power, and this is properly active power. Whatever modification a substance has by which it produces any effect is called action. For example, a solid sub-

stance by motion operates on or alters the sensible ideas of another substance, and so we call this modification of motion action. Yet this motion in that solid substance, rightly considered, is only a passion if it received the motion only from some external agent. So the active power of motion is in no substance that cannot begin motion in itself, or in another substance at rest. It is the same with thinking. A power to receive ideas or thoughts from the operation of some external substance is called a power of thinking, but this is only a passive power, or capacity. But to be able to bring into view ideas that are out of sight, at one's own choice, and to compare whichever of them one thinks fit, is an active power. This reflection may help keep us from mistakes about powers and actions that grammar and the common structure of languages are apt to lead us into. What is signified by the verbs grammarians call active does not always signify action. For example, the proposition "I see the moon, or a star," or "I feel the heat of the sun," is expressed by an active verb. Yet it does not signify any action in me by which I operate on those substances. It signifies the reception of the ideas of light, roundness, and heat, in which I am not active but merely passive, and with my eyes or body in that position I cannot avoid receiving them. But when I turn my eyes another way, or move my body out of the sunbeams, I am properly active, because by my own choice, through a power within myself, I put myself into that motion. Such an action is the product of active power.

2.21.73 And so I have given, in a short sketch, a view of our original ideas, from which all the rest are derived and of which they are made up. If I were to consider them as a philosopher, and examine what causes they depend on and what they are made of, I believe they could all be reduced to these very few primary and original ones. The first are extension, solidity, and mobility, or the power of being moved, which we receive from body by our senses. The others are perceptivity, or the power of perception or thinking, and motivity, or the power of moving, which we receive from our minds by reflection. I ask permission

to use these two new words, to avoid the danger of being misunderstood if I used ambiguous ones. If we add to these existence, duration, and number, which belong to both, we have perhaps all the original ideas on which the rest depend. For by these, I imagine, we could explain the nature of colors, sounds, tastes, smells, and all our other ideas. We would only need faculties acute enough to perceive the variously modified extensions and motions of the minute bodies that produce those various sensations in us. But my present purpose is only to inquire into the knowledge the mind has of things through the ideas and appearances God has fitted it to receive from them, and how the mind comes by that knowledge. It is not to inquire into their causes or manner of production. So I will not go against the design of this essay by setting out to inquire philosophically into the particular constitution of bodies, and the configuration of parts by which they have the power to produce in us the ideas of their sensible qualities. I will not go any further into that investigation. For my purpose it is enough to observe that gold or saffron has a power to produce in us the idea of yellow, and snow or milk the idea of white, which we can have only by sight. We need not examine the texture of the parts of those bodies, or the particular shapes or motion of the particles that rebound from them to cause that particular sensation in us. Still, when we go beyond the bare ideas in our minds and try to inquire into their causes, we can conceive nothing in a sensible object by which it produces different ideas in us, except the different bulk, shape, number, texture, and motion of its insensible parts.

Book II: Of Ideas (Chapters XXII–XXXIII)

Complex ideas of mixed modes, substances and relations; cause and effect; identity and personal identity; clear, real, adequate and true ideas; the association of ideas.

CHAPTER XXII. OF MIXED MODES.

2.22.1 *What mixed modes are.*—Having treated simple modes in the preceding chapters, and given examples of some of the most important of them to show what they are and how we come by them, we must next consider what we call mixed modes. Such are the complex ideas we mark by the names obligation, drunkenness, a lie, and so on. They consist of various combinations of simple ideas of different kinds, so I have called them mixed modes, to distinguish them from the simpler modes, which consist only of simple ideas of the same kind. These mixed modes are also combinations of simple ideas that are not regarded as the characteristic marks of any real beings with a steady existence. They are scattered and independent ideas put together by the mind, and this distinguishes them from the complex ideas of substances.

2.22.2 *Made by the mind.*—Experience shows us that with respect to its simple ideas the mind is wholly passive. It receives them all from the existence and operations of things, as sensation or reflection offers them, and cannot make a single idea. But if we look carefully at the ideas I call mixed modes, which we are now discussing, we will find that their origin is quite different. The mind often exercises an active power in making these various combinations. Once it is furnished with simple ideas, it can put them together in various compositions and so make a variety of

complex ideas, without examining whether they exist together that way in nature. This, I think, is why these ideas are called notions, as if they had their origin and constant existence more in people's thoughts than in the reality of things. To form such ideas it was enough for the mind to put their parts together and for them to be consistent in the understanding, without considering whether they had any real being. I do not deny, though, that several of them might be taken from observation, where various simple ideas exist combined in the same way as they are put together in the understanding. The man who first framed the idea of hypocrisy might have taken it from observing someone who made a show of good qualities he did not have. Or he might have framed that idea in his mind without any such pattern to shape it by. For it is evident that when languages and human societies began, several of the complex ideas that followed from the institutions established among people must have been in their minds before they existed anywhere else. It is also evident that many names standing for such complex ideas were in use, and those ideas already framed, before the combinations they stood for ever existed.

2.22.3 *Sometimes got by the explanation of their names.*—Indeed, now that languages have been made and are full of words standing for such combinations, a usual way of getting these complex ideas is by explaining the terms that stand for them. They consist of a group of simple ideas combined. So they can be represented, by words standing for those simple ideas, to the mind of someone who understands those words, even if that complex combination of simple ideas was never presented to his mind by the real existence of things. Thus a man may come to have the idea of sacrilege or murder by having the simple ideas these words stand for listed for him, without ever seeing either of them committed.

2.22.4 *The name ties the parts of mixed modes into one idea.*—Every mixed mode consists of many distinct simple ideas, so it seems reasonable to ask "where it gets its unity, and how such a precise multitude comes to make only one idea, since that combin-

ation does not always exist together in nature." My answer is that it plainly gets its unity from an act of the mind combining those various simple ideas and considering them as one complex idea made up of those parts. The mark of this union, or what is generally regarded as completing it, is a single name given to that combination. For people commonly reckon up their distinct species of mixed modes by their names. They seldom allow or consider any number of simple ideas to make one complex idea, except those collections that have names. Thus the killing of an old man is by nature as fit to be united into one complex idea as the killing of a man's father. Yet there is no name standing precisely for the one, as there is the name parricide to mark the other. So the former is not taken for a particular complex idea, or for a species of action distinct from killing a young man or any other man.

2.22.5 *The cause of making mixed modes.*—People make certain combinations of simple ideas into distinct and, as it were, settled modes, while neglecting others that in the nature of things are just as apt to be combined and make distinct ideas. If we inquire a little further into what leads them to do this, we will find the reason to be the purpose of language. That purpose is to mark or communicate people's thoughts to one another as quickly as possible. So they usually make into complex modes, and give names to, the collections of ideas they frequently use in their way of life and conversation. Others, which they seldom have occasion to mention, they leave loose, without names to tie them together. When they need to, they prefer to list the ideas that make these up, by the particular names that stand for them. They would rather do that than burden their memories by multiplying named complex ideas that they seldom or never have occasion to use.

2.22.6 *Why words in one language have none answering to them in another.*—This shows us why every language has many particular words that cannot be rendered by any single word of another. The various fashions, customs, and manners of one nation make certain combinations of ideas familiar and neces-

sary to it. Another people may never have had any occasion to make those combinations, or perhaps never even noticed them. Names naturally come to be attached to these combinations, to avoid long circumlocutions about things of daily conversation, and so they become so many distinct complex ideas in people's minds. Thus *ostrakismos* among the Greeks and *proscriptio* among the Romans were words for which other languages had no exactly corresponding names, because they stood for complex ideas that were not in the minds of people of other nations. Where there was no such custom, there was no notion of any such actions. Nor was there any use for the combinations of ideas that those terms united and, as it were, tied together. So in other countries there were no names for them.[1]

2.22.7 *And languages change.*—This also shows why languages constantly change, taking up new terms and laying aside old ones. Changes of customs and opinions bring with them new combinations of ideas that people need to think and talk about often. To avoid long descriptions, new names are attached to these combinations, and so they become new species of complex modes. How many different ideas are wrapped up by this means in one short sound, and how much of our time and breath it saves, anyone will see who takes the trouble to list all the ideas that reprieve or appeal stands for, and then uses a circumlocution in place of either name to make someone understand its meaning.

2.22.8 *Where mixed modes exist.*—I will have occasion to consider this more fully when I come to treat of words and their use. But I could not avoid saying this much here about the names of mixed modes. Mixed modes are fleeting and transient combinations of simple ideas. They have only a short existence anywhere but in people's minds, and even there they exist only while they are being thought of. So nowhere do they look so much like something with a constant and lasting existence as in their names.

1 Ostracism: the Athenian practice of banishing a citizen for ten years by popular vote. Proscription: the Roman practice of publishing lists of outlawed citizens, whose property was seized and who could be killed with impunity.

That is why, with this sort of idea, the names are very apt to be taken for the ideas themselves. Suppose we ask where the idea of a triumph or of an apotheosis exists. Clearly neither could exist all together anywhere in the things themselves. They were actions that took time to perform, and so could never all exist at once. And in people's minds, where the ideas of those actions are supposed to be lodged, they also have a very uncertain existence. So we are apt to attach them to the names that arouse them in us.[2]

2.22.9 *How we get the ideas of mixed modes.*—There are, then, three ways by which we get the complex ideas of mixed modes. 1. By experience and observation of things themselves. Thus by seeing two men wrestle or fence we get the idea of wrestling or fencing. 2. By invention, or voluntarily putting together various simple ideas in our own minds. So whoever first invented printing or etching had an idea of it in his mind before it ever existed. 3. This is the most usual way: by explaining the names of actions we never saw, or of notions we cannot see. We list, and so, as it were, set before our imaginations, all the ideas that go into making them up and are their constituent parts. For we have stored our minds with simple ideas by sensation and reflection, and have learned by use the names that stand for them. By these means we can represent to another person any complex idea we want him to conceive, provided it contains only simple ideas that he knows and calls by the same names as we do. For all our complex ideas can ultimately be resolved into the simple ideas of which they are compounded and originally made up, though their immediate ingredients, if I may put it that way, may also be complex ideas. Thus the mixed mode that the word lie stands for is made up of these simple ideas: 1. Articulate sounds. 2. Certain ideas in the mind of the speaker. 3. Those words being the signs of those ideas. 4. Those signs put together, by affirmation or negation, otherwise than the ideas they stand for are in the mind of the speaker. I do not think I need go any further in ana-

2 A triumph was the Roman victory procession granted to a successful general; an apotheosis was the ceremonial deification of a dead emperor.

lyzing the complex idea we call a lie. What I have said is enough to show that it is made up of simple ideas. It could only be an offensive tediousness to trouble my reader with a more minute list of every particular simple idea that goes into this complex one, since from what has been said he can certainly work it out for himself. The same can be done with all our complex ideas whatsoever. However compounded and recompounded, they can in the end be resolved into simple ideas, which are all the materials of knowledge or thought we have or can have. Nor need we fear that this confines the mind to too scanty a number of ideas, if we consider what an inexhaustible stock of simple modes number and shape alone provide us. Mixed modes allow the various combinations of different simple ideas and of their infinite modes, so we can easily imagine how far they are from being few and scanty. Before we are done, we will see that no one need fear he will not have scope and room enough for his thoughts to range in. That holds even though his thoughts are, as I claim, confined to simple ideas received from sensation or reflection and their various combinations.

2.22.10 *Motion, thinking, and power have been most modified.*—It is worth noticing which of all our simple ideas have been most modified and have had the most mixed ideas made out of them, with names given to them. They have been these three: thinking and motion (the two ideas that include all action within them), and power, from which these actions are conceived to flow. The simple ideas of thinking, motion, and power, I say, have been the most modified, and out of their modifications the most complex modes with names have been made. For action is the great business of mankind, and the whole subject matter of all laws. So it is no wonder that the various modes of thinking and motion have been noticed, their ideas observed and stored in memory, and names assigned to them. Without this, laws could only be badly made, and vice and disorder could hardly be repressed. Nor could people communicate well with one another without such complex ideas with names attached. So they have settled names, and supposedly settled ideas in their

minds, for modes of action distinguished by their causes, means, objects, ends, instruments, time, place, and other circumstances. They have done the same for the powers suited to those actions. For example, boldness is the power to speak or do what we intend before others, without fear or confusion; and the Greeks have a special name for confidence in speaking, *parrhēsia*. When this power or ability in a person to do something has been acquired by frequently doing the same thing, it is the idea we name habit. When it is forward and ready on every occasion to break out into action, we call it disposition. Thus, testiness is a disposition or aptness to be angry.[3]

To conclude: let us examine any modes of action. Consideration and assent are actions of the mind; running and speaking are actions of the body; revenge and murder are actions of both together. We will find them to be only so many collections of simple ideas, which together make up the complex ideas signified by those names.

2.22.11 *Several words that seem to signify action signify only the effect.*—Power is the source from which all action proceeds. The substances in which these powers are, when they exert this power in act, are called causes. The substances produced as a result, or the simple ideas introduced into some subject by the exercise of that power, are called effects. The efficacy by which the new substance or idea is produced is called action in the subject exerting that power, but passion in the subject in which some simple idea is changed or produced. This efficacy may be very various and its effects almost infinite. Yet I think we can conceive it, in intellectual agents, to be nothing but modes of thinking and willing, and in bodily agents, nothing but modifications of motion. I say I think we cannot conceive it to be anything other than these two. For if some other sort of action besides these produces effects, I confess I have no notion or idea of it. So it is quite remote from my thoughts, apprehensions, and knowledge, and as much in the dark to me as five other senses

3 *Parrhēsia*: frankness or freedom of speech, especially speaking boldly before those in power.

would be, or as the ideas of colors are to a blind man. And therefore many words that seem to express some action signify nothing of the action or *modus operandi* (manner of operating) at all. They signify merely the effect, with some circumstances of the subject acted on or of the cause operating. For example, creation and annihilation contain no idea of the action or manner by which they are produced, but only of the cause and the thing done. And when a countryman says the cold freezes water, the word freezing seems to imply some action. But it really signifies nothing but the effect, namely that water that was fluid before has become hard and solid. It contains no idea of the action by which this is done.

2.22.12 *Mixed modes also made of other ideas.*—Power and action make up the greatest part of the mixed modes that are marked by names and familiar in people's minds and mouths. I do not think I need to point out here that other simple ideas and their various combinations are not excluded. Still less, I think, will I need to list all the mixed modes that have been settled with names. That would mean making a dictionary of most of the words used in theology, ethics, law, politics, and several other sciences. All my present design requires is to show what sort of ideas the ones I call mixed modes are, how the mind comes by them, and that they are compositions made up of simple ideas got from sensation and reflection. I believe I have done this.

IDEAS OF SUBSTANCES

Locke argues that our idea of substance is only a supposed support of qualities, something we know not what.

2.23.1 *How ideas of substances are made.*—As I have explained, the mind is furnished with a great number of simple ideas. Some are conveyed in by the senses, as they are found in external things, and some come by reflection on its own operations. The mind also notices that a certain number of these simple ideas go constantly together. These are presumed to belong to one thing. And since words are suited to common understanding and used

for quick dispatch, they are called by one name, as united in one subject. Through inadvertence we are later apt to talk of this and consider it as one simple idea, when it is really a complication of many ideas together. For, as I have said, we cannot imagine how these simple ideas can subsist by themselves. So we get used to supposing some *substratum* in which they subsist and from which they result, and we therefore call it *substance*.

2.23.2 *Our idea of substance in general.*—So if anyone examines himself about his notion of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of those qualities that are capable of producing simple ideas in us. These qualities are commonly called accidents. If someone were asked what the subject is in which color or weight inheres, he would have nothing to say but the solid extended parts. And if he were asked what solidity and extension inhere in, he would be in hardly a better position than the Indian mentioned earlier. That Indian said that the world was supported by a great elephant, and was asked what the elephant rested on. His answer was: a great tortoise. But when he was pressed again to say what supported the broad-backed tortoise, he replied: something, he knew not what.[4] And so here, as in all other cases where we use words without having clear and distinct ideas, we talk like children. When children are asked what some thing is that they do not know, they readily give the satisfying answer that it is something. Used this way, by children or adults, the word in truth means no more than that they do not know what. The thing they claim to know and talk about is something they have no distinct idea of at all, so they are perfectly ignorant of it and in the dark. The idea to which we give the general name substance, then, is nothing but the supposed but unknown support of the qualities we find existing. We imagine these qualities cannot subsist *sine re substante*, without something to support them, and we call that support *substantia*. According to the true meaning of the word, this is in plain English *standing under*, or *upholding*.

4 The Indian philosopher and his elephant and tortoise appear earlier, at 2.13.19.

2.23.3 *Of the sorts of substances.*—Once an obscure and relative idea of substance in general has been formed in this way, we come to have the ideas of particular sorts of substances. We do this by collecting the combinations of simple ideas that experience and the observation of people's senses have found to exist together. These are therefore supposed to flow from the particular internal constitution, or unknown essence, of that substance. This is how we come to have the ideas of a man, a horse, gold, water, and so on. Does anyone have any clearer idea of these substances than of certain simple ideas coexisting together? I leave that to everyone's own experience. It is the ordinary observable qualities of iron or a diamond, put together, that make the true complex idea of those substances, and a smith or a jeweler commonly knows these better than a philosopher. Whatever substantial forms the philosopher may talk of, he has no other idea of those substances than one framed by a collection of the simple ideas found in them. We must only note one thing. Our complex ideas of substances, besides all the simple ideas they are made up of, always include the confused idea of something to which they belong and in which they subsist.[5] And so when we speak of any sort of substance, we say it is a thing having such-and-such qualities. Body is a thing that is extended, shaped, and capable of motion; spirit is a thing capable of thinking. And we say that hardness, friability, and the power to draw iron are qualities found in a lodestone. These and similar ways of speaking imply that the substance is always supposed to be something besides the extension, shape, solidity, motion, thinking, or other observable ideas, though we do not know what it is.

2.23.4 *No clear idea of substance in general.*—Hence, we may talk or think of some particular sort of bodily substance, such as horse, stone, and so on. The idea we have of either of them is only the complication or collection of the various simple ideas of sensible qualities that we usually find united in the thing called

5 "Substantial forms": the scholastic doctrine, derived from Aristotle, that each natural kind has an inner form making it what it is.

horse or stone. Yet because we cannot conceive how they could subsist alone, or one in another, we suppose them to exist in and be supported by some common subject. *We denote this support by the name substance*, though it is certain that we have no clear or distinct idea of the thing we suppose to be a support.

2.23.5 *As clear an idea of spirit as of body.*—The same thing happens with the operations of the mind, namely thinking, reasoning, fearing, and so on. We conclude that these do not subsist of themselves, and we cannot see how they could belong to body or be produced by it. So we are apt to think them the actions of some other substance, which we call spirit. Yet we have no other idea or notion of matter than something in which the many sensible qualities that affect our senses subsist. So it is evident that by supposing a substance in which *thinking, knowing, doubting*, a power of moving, and so on subsist, *we have as clear a notion of the substance of spirit as we have of body*. The one is supposed, without our knowing what it is, to be the *substratum* of the simple ideas we have from outside. The other is supposed, with a like ignorance of what it is, to be the substratum of the operations we experience within ourselves. It is plain, then, that the idea of bodily *substance* in matter is as remote from our conceptions and apprehensions as that of spiritual *substance*, or spirit. So our having no notion of the substance of spirit no more lets us conclude that it does not exist than the same reason would let us deny the existence of body. It is as rational to say there is no body, because we have no clear and distinct idea of the *substance* of matter, as to say there is no spirit, because we have no clear and distinct idea of the substance of a spirit.

2.23.6 *Of the sorts of substances.*—Whatever the secret, abstract nature of substance in general may be, all *the ideas we have of particular distinct sorts of substances* are nothing but various combinations of simple ideas. These coexist in some cause of their union, unknown to us, that makes the whole subsist of itself. It is by such combinations of simple ideas, and nothing else, that we represent particular sorts of *substances* to ourselves. Such are the ideas we have in our minds of their various species, and

these alone are what we signify to others by their specific names —for example, *man, horse, sun, water, iron*. On hearing these words, everyone who understands the language frames in his mind a combination of the various simple ideas he has usually observed, or imagined, to exist together under that name. He supposes them all to rest in, and be as it were attached to, that unknown common subject which does not inhere in anything else. Yet meanwhile it is obvious, and anyone who looks into his own thoughts will find, that he has no other idea of any *substance* —say, *gold, horse, iron, man, vitriol, bread*—than the idea of the sensible qualities he supposes to inhere in it. To this he adds the supposition of a *substratum* that gives, as it were, a support to those qualities or simple ideas he has observed to exist united together. Take the idea of the sun. What is it but an aggregate of various simple ideas: bright, hot, roundish, having a constant regular motion, at a certain distance from us, and perhaps some others? How many there are depends on how accurately the person who thinks and talks about the sun has observed the sensible qualities, ideas, or properties that are in the thing he calls the sun.

2.23.7 *Power a great part of our complex ideas of substances.*—For whoever has gathered and put together the most simple ideas that exist in a particular sort of substance has the most perfect idea of it. Its active powers and passive capacities are to be counted among these ideas. Though they are not simple ideas, for brevity's sake they may conveniently enough be counted among them in this respect. Thus the power of drawing iron is one of the ideas in the complex idea of the substance we call a lodestone, and a power to be so drawn is part of the complex idea we call iron. These powers pass for inherent qualities in those subjects. For through the powers we observe in it, every substance is as apt to change some sensible qualities in other subjects as it is to produce in us the simple ideas we receive directly from it. So by the new sensible qualities it introduces into other subjects, it reveals to us those powers. Through those qualities the powers affect our senses indirectly, as regularly as

the substance's own sensible qualities affect them directly. For example, we directly perceive by our senses the heat and color of fire, which, rightly considered, are nothing but powers in it to produce those ideas in us. We also perceive by our senses the color and brittleness of charcoal, and in this way we come to know another power in fire, its power to change the color and consistency of wood. Fire reveals the first of these qualities to us directly and the second indirectly. So we regard both as part of the qualities of fire, and make them part of our complex idea of it. All the powers we take notice of end only in altering some sensible qualities in the subjects they act on, so that those subjects present new sensible ideas to us. That is why I have counted these powers among the simple ideas that make up the complex ideas of the sorts of substances, though these powers, considered in themselves, are really complex ideas. I ask to be understood in this looser sense when I name any of these potentialities among the simple ideas that we call to mind when we think of particular substances. For if we want true, distinct notions of the various sorts of substances, we must consider the powers that are in each of them.

2.23.8 *And why.*—Nor should we be surprised that powers make up a great part of our complex ideas of substances. In most substances, it is chiefly their secondary qualities that distinguish them from one another, and these commonly make up a considerable part of the complex idea of each sort. For our senses fail to discover the bulk, texture, and shape of the minute parts of bodies, on which their real constitutions and differences depend. So we are obliged to use their secondary qualities as the characteristic signs and marks by which we frame ideas of them in our minds and distinguish them from one another. And all these secondary qualities, as has been shown, are nothing but bare powers. The color and taste of opium are mere powers, just as its soporific or pain-relieving virtues are. They depend on its primary qualities, which fit it to produce different operations on different parts of our bodies.

2.23.9 *Three sorts of ideas make up our complex ideas of substances.*—The ideas that make up our complex ideas of bodily substances are of three sorts. First, the ideas of the primary qualities of things. Our senses discover these, and they are in the things even when we do not perceive them. Such are the bulk, shape, number, situation, and motion of the parts of bodies, which are really in them whether we notice them or not. Second, the sensible secondary qualities, which depend on these. They are nothing but the powers those substances have to produce various ideas in us through our senses, and these ideas are not in the things themselves, except as anything is in its cause. Third, the aptness we consider in a substance to give or receive such alterations of primary qualities that the altered substance would produce in us ideas different from those it produced before. These are called active and passive powers. As far as we have any awareness or notion of them, all these powers end only in sensible simple ideas. For whatever alteration a lodestone has the power to make in the minute particles of iron, we would have no notion that it had any power at all to act on iron if its sensible motion did not reveal it. And I do not doubt that the bodies we handle every day have the power to cause a thousand changes in one another that we never suspect, because those changes never show themselves in sensible effects.

2.23.10 *Powers make a great part of our complex ideas of substances.*—So powers rightly make up a great part of our complex ideas of substances. Anyone who examines his complex idea of gold will find that several of the ideas that make it up are only powers. The power of being melted without being consumed in the fire, and of being dissolved in aqua regia, are ideas as necessary to our complex idea of gold as its color and weight. And color and weight, if properly considered, are also nothing but different powers.[6] For, to speak truly, yellowness is not actually in gold. It is a power in gold to produce that idea in us through our eyes when the gold is placed in a suitable light. And the heat, which

6 Aqua regia ("royal water"): a mixture of nitric and hydrochloric acids, known for dissolving gold.

we cannot leave out of our idea of the sun, is no more really in the sun than the white color it produces in wax. Both are equally powers in the sun. By the motion and shape of its insensible parts, the sun acts on a man so as to make him have the idea of heat, and acts on wax so as to make it able to produce in a man the idea of white.

2.23.11 *The present secondary qualities of bodies would disappear if we could discover the primary qualities of their minute parts.*—Suppose we had senses sharp enough to make out the minute particles of bodies, and the real constitution on which their sensible qualities depend. I have no doubt these would then produce quite different ideas in us. What is now the yellow color of gold would disappear, and in its place we would see a wonderful texture of parts of a certain size and shape. Microscopes plainly show us this. What produces a certain color to our naked eyes is found to be quite a different thing when the sharpness of our senses is increased in this way. This change alters, so to speak, the proportion between the size of the minute parts of a colored object and our ordinary sight, and so it produces different ideas from those the object produced before. So sand or pounded glass, which is opaque and white to the naked eye, is transparent under a microscope. And a hair seen this way loses its former color and becomes largely transparent, with a mixture of some bright sparkling colors, like those that come from the refraction of diamonds and other transparent bodies. Blood looks entirely red to the naked eye. But a good microscope, in which its smaller parts can be seen, shows only a few red globules floating in a transparent liquid. And how these red globules would look if lenses could be found to magnify them a thousand or ten thousand times more is uncertain.

FACULTIES SUITED TO OUR STATE

Locke argues that God fitted our senses to the needs of this life, not to seeing the minute parts of things.

2.23.12 *Our faculties of discovery suited to our state.*—The infinitely wise designer of us, and of everything around us, has fitted our senses, faculties, and organs to the conveniences of life and to the business we have to do here. By our senses we are able to know and distinguish things. We can examine them far enough to put them to our uses and to meet the needs of this life in various ways. We have insight enough into their admirable design and wonderful effects to admire and praise the wisdom, power, and goodness of their author. Knowledge of this kind is suited to our present condition, and we do not lack the faculties to attain it. But it does not appear that God intended us to have a perfect, clear, and adequate knowledge of things; that is perhaps beyond the grasp of any finite being. We are furnished with faculties, dull and weak as they are, that let us discover enough in created things to lead us to the knowledge of the Creator and the knowledge of our duty. And we have abilities well enough suited to providing for the conveniences of living. These are our business in this world. But if our senses were altered and made much quicker and sharper, the appearance and outward pattern of things would look quite different to us. I am inclined to think this would be inconsistent with our being, or at least our well-being, in the part of the universe we inhabit. Consider how poorly our constitution can bear being moved into regions of the air not much higher than the one we ordinarily breathe. Anyone who considers this will have reason to be satisfied that, on this globe of earth assigned as our dwelling, the all-wise Architect has suited our organs and the bodies that are to affect them to one another. If our sense of hearing were only a thousand times sharper than it is, how a perpetual noise would distract us! Even in the quietest retreat we would be less able to sleep or meditate than in the middle of a sea battle. Indeed, take

seeing, the most instructive of our senses. Suppose that in some man it were a thousand or a hundred thousand times sharper than it is with the best microscope. Things several million times smaller than the smallest object he can now see would then be visible to his naked eyes. He would thus come closer to discovering the texture and motion of the minute parts of bodily things, and in many of them he would probably get ideas of their internal constitutions. But then he would be in a quite different world from other people. Nothing would appear the same to him as to others; the visible ideas of everything would be different. So I doubt whether he and the rest of mankind could talk about the objects of sight, or communicate at all about colors, since the appearances would be so entirely different. And perhaps sight so quick and delicate could not bear bright sunshine, or even open daylight. It might take in only a very small part of any object at a time, and only at very close range. Suppose that with the help of such microscopic eyes, if I may call them that, a man could see further than usual into the secret composition and fundamental texture of bodies. He would still not gain much by the change if such sharp sight could not guide him to the market and the exchange. He would gain little if he could not see the things he needed to avoid at a convenient distance, or tell apart the things he had to deal with by the sensible qualities other people use. Someone sharp-sighted enough to see the arrangement of the minute particles in the spring of a clock, and to observe the particular structure and impulse on which its elastic motion depends, would no doubt discover something very remarkable. But suppose eyes built that way could not take in the hand and the numerals of the dial at once, and so see from a distance what time it was. Then their owner could not benefit much from that sharpness. While it revealed the secret design of the machine's parts, it would make him lose the machine's use.

2.23.13 *Conjecture about spirits.*—And here allow me to propose a far-fetched conjecture of mine. If any credit is to be given to reports of things our philosophy cannot account for, we have

some reason to imagine that spirits can take on bodies of different size, shape, and arrangement of parts. So I wonder whether one great advantage some of them have over us may lie in this. Perhaps they can frame and shape for themselves organs of sensation or perception suited to their present purpose and to the circumstances of the object they want to consider. For how far would a man surpass all others in knowledge if he only had the ability to arrange the structure of his eyes, that one sense, so as to make it capable of all the different degrees of vision that lenses have taught us to conceive? (Lenses were first hit upon by chance.) What wonders would he discover if he could adjust his eyes to all sorts of objects? Whenever he pleased, he could see the shape and motion of the minute particles in the blood and other fluids of animals as distinctly as at other times he sees the shape and motion of the animals themselves. But to us, in our present state, unchangeable organs designed to discover the shape and motion of the minute parts of bodies would perhaps be of no advantage, even though the sensible qualities we now observe in bodies depend on those parts. God has no doubt made our organs in the way that is best for us in our present condition. He has fitted us for the neighborhood of the bodies that surround us and that we have to deal with. And though we cannot attain a perfect knowledge of things with the faculties we have, they will serve us well enough for the ends mentioned above, which are our great concern. I beg my reader's pardon for setting before him so wild a fancy about the ways of perception in beings above us. But however far-fetched it may be, I doubt whether we can imagine anything about the knowledge of angels except in this way, somehow or other in proportion to what we find and observe in ourselves. We must allow that the infinite power and wisdom of God may create beings with a thousand other faculties and ways of perceiving outside things besides the ones we have. Yet our thoughts can go no further than our own. That is how impossible it is for us to extend even our guesses beyond the ideas received from our own sensation and reflection. At any rate, the supposition that angels some-

times take on bodies need not startle us, since some of the most ancient and most learned Fathers of the Church seemed to believe that angels had bodies. And this much is certain: their state and way of existence are unknown to us.[7]

2.23.14 *Complex ideas of substances.*—But to return to the matter at hand, the ideas we have of substances and the ways we come by them. I say that our specific ideas of substances are nothing but a collection of a certain number of simple ideas, considered as united in one thing. These ideas of substances are commonly simple apprehensions, and their names are simple terms. Even so, they are in fact complex and compounded. So the idea an Englishman signifies by the name *swan* is white color, long neck, red beak, black legs, and webbed feet, all of a certain size, with a power of swimming in the water and making a certain kind of noise. For someone who has long observed this kind of bird, the idea may include some other properties as well. All of these end in sensible simple ideas, united in one common subject.

2.23.15 *Idea of spiritual substances as clear as of bodily substances.*—Besides the complex ideas we have of material sensible substances, which I have just discussed, we are able to frame the complex idea of an immaterial spirit. We do it from the simple ideas we have taken from the operations of our own minds, which we experience daily in ourselves: thinking, understanding, willing, knowing, the power of beginning motion, and so on, considered as coexisting in some substance. And so, by putting together the ideas of thinking, perceiving, liberty, and the power of moving themselves and other things, we have as clear a perception and notion of immaterial substances as we have of material ones. For we put together the ideas of thinking and willing, or of the power of moving or stopping bodily motion, and join them to substance, of which we have no distinct idea. That gives us the idea of an immaterial spirit. And we put together the ideas of coherent solid parts and a power of being

7 Early Christian writers such as Tertullian and Origen were often cited as holding that angels have subtle bodies.

moved, and join them with substance, of which we likewise have no positive idea. That gives us the idea of matter. The one idea is as clear and distinct as the other. The ideas of thinking and of moving a body are as clear and distinct as the ideas of extension, solidity, and being moved. For our idea of substance is equally obscure, or nonexistent, in both cases; it is only a supposed I-know-not-what that supports the ideas we call accidents. It is from lack of reflection that we tend to think our senses show us nothing but material things. Every act of sensation, properly considered, gives us an equal view of both parts of nature, the bodily and the spiritual. For while I know, by seeing or hearing and so on, that there is some bodily being outside me, the object of that sensation, I know more certainly that there is some spiritual being within me that sees and hears. I must be convinced that this cannot be the action of bare insensible matter, and never could be without an immaterial thinking being.

2.23.16 *No idea of abstract substance.*—We know body only through the complex idea of what is extended, shaped, colored, and has all the other sensible qualities. By that idea we are as far from the idea of the substance of body as if we knew nothing at all. We imagine we are well acquainted and familiar with matter, and people are confident they perceive and know many qualities in bodies. Yet on examination it may turn out that they have no more primary ideas belonging to body, and no clearer ones, than they have belonging to immaterial spirit.

2.23.17 *The cohesion of solid parts and impulse the primary ideas of body.*—The primary ideas we have that are peculiar to body, as distinguished from spirit, are these: the cohesion of solid, and therefore separable, parts, and a power of communicating motion by impulse. These, I think, are the original ideas proper and peculiar to body. Shape is only the consequence of finite extension.

2.23.18 *Thinking and motivity the primary ideas of spirit.*—The ideas we have that belong and are peculiar to spirit are thinking and will, or a power of putting body into motion by thought, and

liberty, which follows from this. A body cannot help communicating its motion by impulse to another body it meets at rest. The mind, by contrast, can put bodies into motion or refrain from doing so, as it pleases. The ideas of existence, duration, and mobility are common to both.

2.23.19 *Spirits capable of motion.*—There is no reason why anyone should find it strange that I assign mobility to spirit. I have no other idea of motion than change of distance from other beings that are considered as at rest. I find that spirits, like bodies, cannot operate except where they are, and that spirits do operate at different times in different places. So I cannot help attributing change of place to all finite spirits. (I am not speaking here of the infinite spirit.) For my soul is a real being, just as my body is. It is therefore certainly as capable of changing its distance from any other body or being as body itself is, and so it is capable of motion. And if a mathematician can consider a certain distance between two points, or a change in that distance, we can certainly conceive a distance and a change of distance between two spirits. So we can conceive their motion, their approaching one another or moving apart.

2.23.20 Everyone finds in himself that his soul can think, will, and act on his body in the place where his body is. But it cannot act on a body a hundred miles away, or in a place that far off. Nobody can imagine that his soul can think or move a body at Oxford while he is in London. And he cannot help knowing that his soul, being united to his body, constantly changes place throughout the whole journey between Oxford and London, just as the coach or horse that carries him does. I think it may truly be said to be in motion all that time. Perhaps someone will not grant that this gives us a clear enough idea of its motion. Then its separation from the body at death will, I think. To consider the soul as going out of the body, or leaving it, and yet to have no idea of its motion, seems impossible to me.

2.23.21 Someone may say that the soul cannot change place because it has no place, since spirits are not *in loco* but *ubi*. I suppose that way of talking will not carry much weight with many

people now. This age is not much inclined to admire such unintelligible ways of speaking, or to let itself be deceived by them. But if anyone thinks there is sense in that distinction, and that it applies to our present purpose, I ask him to put it into intelligible English. Then let him draw from it a reason to show that immaterial spirits are not capable of motion.[8] Motion, indeed, cannot be attributed to God. That is not because he is an immaterial spirit, but because he is an infinite one.

SOUL AND BODY COMPARED

Locke argues that the cohesion of body is as hard to understand as thinking, so spirit is as clear as body.

2.23.22 *Idea of soul and body compared.*—Let us compare, then, our complex idea of an immaterial spirit with our complex idea of body. Let us see whether there is more obscurity in one than in the other, and which has more. Our idea of body, I think, is of an extended solid substance capable of communicating motion by impulse. Our idea of soul, as an immaterial spirit, is of a substance that thinks and has a power of producing motion in body by willing, or thought. These, I think, are our complex ideas of soul and body as distinguished from each other. Now let us examine which has the most obscurity in it and is hardest to grasp. I know there are people whose thoughts are immersed in matter, and who have so subjected their minds to their senses that they seldom reflect on anything beyond them. Such people are apt to say they cannot comprehend a thinking thing. Perhaps that is true. But I maintain that, when they consider it well, they can no more comprehend an extended thing.

2.23.23 *Cohesion of solid parts in body as hard to be conceived as thinking in a soul.*—If anyone says he does not know what it is that thinks in him, he means he does not know what the substance of that thinking thing is. No more, I say, does he know

8 A scholastic distinction: bodies are "in a place" (*in loco*), occupying it by their dimensions, while spirits are only "somewhere" (*ubi*), present without occupying space.

what the substance of that solid thing is. Further, if he says he does not know how he thinks, I answer that neither does he know how he is extended. He does not know how the solid parts of body are united, or cohere, to make extension. The pressure of the particles of air may account for the cohesion of various parts of matter that are coarser than the particles of air and have pores smaller than the corpuscles of air. But the weight or pressure of the air will not explain the coherence of the particles of air themselves, and it cannot be the cause of it. Perhaps the pressure of the ether, or of some matter subtler than air, may unite and hold fast the parts of a particle of air, as well as those of other bodies. Still, it cannot make bonds for itself and hold together the parts that make up even the smallest corpuscle of that *materia subtilis*.[9] So the hypothesis explains that the parts of sensible bodies are held together by the pressure of other, external, insensible bodies. But however ingeniously it is worked out, it does not reach the parts of the ether itself. The more clearly it proves that the parts of other bodies are held together by the external pressure of the ether, and can have no other conceivable cause of their cohesion and union, the more it leaves us in the dark about the cohesion of the parts of the corpuscles of the ether itself. We cannot conceive these corpuscles without parts, since they are bodies and divisible. Nor can we conceive how their parts cohere, since they lack the cause of cohesion that is offered for the parts of all other bodies.

2.23.24 But in truth, the pressure of a surrounding fluid, however great, can be no intelligible cause of the cohesion of the solid parts of matter. Such pressure may prevent two polished surfaces from being pulled apart in a line perpendicular to them, as in the experiment of the two polished marbles. But it can never in the least prevent their separation by a motion in a line parallel to those surfaces. The surrounding fluid is entirely free to move into each point of space left empty by such a sideways motion. So it resists this motion of bodies joined in this

9 *Materia subtilis*: "subtle matter," the very fine fluid that fills space in Descartes' physics.

way no more than it would resist the motion of a body surrounded on all sides by that fluid and touching no other body. Therefore, if there were no other cause of cohesion, all the parts of bodies would have to be easily separable by such a sideways sliding motion.[10] For if the pressure of the ether is the adequate cause of cohesion, then wherever that cause does not operate there can be no cohesion. And it cannot operate against such a sideways separation, as has been shown. So take any imaginary plane cutting through any mass of matter. Along that plane there could be no more cohesion than there is between two polished surfaces, which will always slide easily off each other, whatever pressure of a fluid we imagine. Perhaps, then, we think we have a very clear idea of the extension of body, which is nothing but the cohesion of solid parts. Yet anyone who considers it carefully in his mind may have reason to conclude that it is as easy for him to have a clear idea of how the soul thinks as of how body is extended. Body is extended no further, and in no other way, than by the union and cohesion of its solid parts. So we will understand the extension of body very poorly unless we understand what the union and cohesion of its parts consists in. And that seems to me as incomprehensible as the manner of thinking and how it is carried out.

2.23.25 I grant that most people tend to wonder how anyone could find a difficulty in what they think they observe every day. Do we not see, they will be quick to say, that the parts of bodies stick firmly together? Is anything more common? And how can there be any doubt about it? And I say the same about thinking and voluntary motion. Do we not experience them in ourselves every moment? So how can they be doubted? The matter of fact is clear, I admit. But when we try to look a little closer and consider how it is done, I think we are at a loss in both cases. We can no more understand how the parts of body cohere than how we ourselves perceive or move. Take the parts of gold or brass. A moment ago, when molten, they were as loose from one another

10 Two polished marble slabs pressed together are hard to pull apart; the effect was commonly explained by the pressure of the surrounding air.

as the particles of water or the sand in an hourglass. In a few moments they become so united, and stick to one another so strongly, that the utmost force of men's arms cannot separate them. I would like someone to explain to me intelligibly how this happens. A thoughtful man will, I suppose, be at a loss here to satisfy his own understanding or anyone else's.

2.23.26 The little bodies that make up the fluid we call water are so extremely small that I have never heard of anyone who claimed to perceive their distinct size, shape, or motion with a microscope. And yet I have heard of microscopes that have magnified ten thousand times, and even far more than a hundred thousand times. The particles of water are also so completely loose from one another that the least force visibly separates them. Indeed, if we consider their perpetual motion, we must grant that they have no cohesion with one another. And yet let a sharp cold come, and they unite and solidify. These little atoms cohere and cannot be separated without great force. Whoever could find the bonds that tie these heaps of loose little bodies together so firmly, or could make known the cement that makes them stick so fast to one another, would discover a great secret that is still unknown. And yet, even when that was done, he would be far from making the extension of body intelligible, since extension is the cohesion of its solid parts. He would not have made it intelligible until he could show what the union or consolidation consists in, whether of the parts of those bonds, or of that cement, or of the least particle of matter that exists. This shows that the cohesion of solid parts, a primary and supposedly obvious quality of body, will be found on examination to be as incomprehensible as anything belonging to our minds. A solid extended substance is as hard to conceive as a thinking immaterial one, whatever difficulties some would raise against the thinking one.

2.23.27 To extend our thoughts a little further: the pressure brought in to explain the cohesion of bodies is as unintelligible as the cohesion itself. Matter is no doubt finite, so let us consider it that way. Let anyone send his thoughts to the outer lim-

its of the universe. There let him see what conceivable hoops, what bond, he can imagine that holds this mass of matter pressed so closely together, and so gives steel its firmness and the parts of a diamond their hardness and indissolubility. If matter is finite, it must have its limits, and there must be something to keep it from scattering apart. Suppose someone, to avoid this difficulty, throws himself into the supposition, and the abyss, of infinite matter. Let him consider what light that throws on the cohesion of body. Is he any nearer making it intelligible by reducing it to a supposition more absurd and incomprehensible than any other? So far is our idea of the extension of body, which is nothing but the cohesion of solid parts, from being clearer or more distinct than the idea of thinking, when we try to inquire into its nature, cause, or manner.

2.23.28 *Communication of motion by impulse, or by thought, equally intelligible.*—Another idea we have of body is the power of communicating motion by impulse; and another idea we have of our souls is the power of producing motion by thought. Everyday experience clearly furnishes us with these ideas, the one of body, the other of our minds. But if here again we ask how this is done, we are equally in the dark. Take the communication of motion by impulse, in which one body loses as much motion as the other gains. This is the most ordinary case, and we can conceive of it only as motion passing out of one body into another. That, I think, is as obscure and inconceivable as how our minds move or stop our bodies by thought, which we find every moment that they do. And the increase of motion by impulse, which is observed or believed to happen sometimes, is harder still to understand. Daily experience gives us clear evidence of motion produced both by impulse and by thought. But the manner of it, the how, hardly comes within our comprehension; we are equally at a loss in both cases. So however we consider motion and its communication, whether from body or from spirit, the idea that belongs to spirit is at least as clear as the one that belongs to body. And if we consider the active power of moving, or, as I may call it, motivity, it is much clearer in spirit

than in body. Two bodies placed next to each other at rest will never give us the idea of a power in one to move the other, except by motion borrowed from something else. The mind, on the other hand, gives us ideas every day of an active power of moving bodies. It is therefore worth considering whether active power is not the proper attribute of spirits, and passive power the proper attribute of matter. From this it may be conjectured that created spirits are not entirely separate from matter, because they are both active and passive. Pure spirit, namely God, is only active; pure matter is only passive; and we may judge that beings that are both active and passive share in both. But be that as it may, I think we have as many ideas belonging to spirit as we have belonging to body, and ideas as clear, though the substance of each is equally unknown to us. The idea of thinking in spirit is as clear as that of extension in body. And the communication of motion by thought, which we attribute to spirit, is as evident as communication by impulse, which we ascribe to body. Constant experience makes us aware of both, though our narrow understandings can comprehend neither. For the mind may try to look beyond the original ideas we have from sensation or reflection, and to penetrate into their causes and the manner of their production. When it does, we find that it still discovers nothing but its own short-sightedness.

2.23.29 To conclude: sensation convinces us that there are solid extended substances, and reflection that there are thinking ones. Experience assures us that such beings exist, and that the one has a power to move body by impulse, the other by thought. This we cannot doubt. Experience, I say, furnishes us every moment with clear ideas of both. But our faculties will not reach beyond these ideas, as received from their proper sources. If we try to inquire further into their nature, causes, and manner, we perceive the nature of extension no more clearly than that of thinking. If we try to explain them any further, the one is as easy as the other. It is no harder to conceive how a substance we do not know should set body in motion by thought than how a substance we do not know should set body in motion by impulse. So

we are no more able to discover what the ideas belonging to body consist in than what those belonging to spirit consist in. From this it seems probable to me that the simple ideas we receive from sensation and reflection are the boundaries of our thoughts. Beyond them the mind cannot advance one jot, whatever efforts it makes. Nor can it make any discoveries when it tries to pry into the nature and hidden causes of those ideas.

2.23.30 *Idea of spirit and body compared.*—In short, then, the idea we have of spirit, compared with the idea we have of body, stands like this. The substance of spirit is unknown to us, and the substance of body is equally unknown to us. We have distinct, clear ideas of two primary qualities or properties of body, namely solid coherent parts and impulse. Likewise we know two primary qualities or properties of spirit and have distinct, clear ideas of them, namely thinking and a power of action, that is, a power of beginning or stopping various thoughts or motions. We also have ideas of various qualities inherent in bodies, and these ideas are clear and distinct. These qualities are only the various modifications of the extension of cohering solid parts and of their motion. Likewise we have ideas of the various modes of thinking, namely believing, doubting, intending, fearing, hoping, all of which are only various modes of thinking. We also have the ideas of willing, of moving the body as a consequence of willing, and of moving along with the body itself too. For, as has been shown, spirit is capable of motion.

2.23.31 *The notion of spirit involves no more difficulty in it than that of body.*—Finally, this notion of immaterial spirit may perhaps have some difficulties in it that are not easy to explain. But that gives us no more reason to deny or doubt the existence of such spirits than we have to deny or doubt the existence of body. For the notion of body is also burdened with some difficulties that are very hard for us to explain or understand, and perhaps impossible. For I would gladly see anyone point to something in our notion of spirit that is more perplexing, or nearer to a contradiction, than what the very notion of body contains. Take the divisibility *in infinitum* of any finite extension. Whether we

grant it or deny it, it involves us in consequences that cannot be explained or made consistent in our minds. These consequences carry greater difficulty and more evident absurdity than anything that can follow from the notion of an immaterial knowing substance.

2.23.32 *We know nothing beyond our simple ideas.*—We should not be at all surprised at this. We have only a few superficial ideas of things. They come to us either from outside, through the senses, or from within, when the mind reflects on what it experiences in itself. We have no knowledge beyond that, and still less knowledge of the internal constitution and true nature of things, since we lack the faculties to attain it. We experience and discover knowledge and the power of voluntary motion in ourselves as certainly as we experience or discover, in things outside us, the cohesion and separation of solid parts, which is the extension and motion of bodies. So we have as much reason to be satisfied with our notion of immaterial spirit as with our notion of body, and to accept the existence of the one as much as the other. For it is no more a contradiction that thinking should exist separate from and independent of solidity than that solidity should exist separate from and independent of thinking, since they are both only simple ideas, independent of each other. And we have ideas of thinking as clear and distinct as our ideas of solidity. So I do not see why we should not allow a thinking thing without solidity, that is, something immaterial, to exist, just as we allow a solid thing without thinking, that is, matter, to exist. This is especially so because it is no harder to conceive how thinking should exist without matter than how matter should think. For whenever we try to go beyond the simple ideas we have from sensation and reflection, and dive further into the nature of things, we immediately fall into darkness and obscurity, perplexity and difficulties. We can discover nothing more than our own blindness and ignorance. But whichever of these complex ideas is clearer, that of body or that of immaterial spirit, this much is evident. The simple ideas that make them up are nothing other than those we have received

from sensation or reflection. And the same is true of all our other ideas of substances, even our idea of God himself.

2.23.33 *Idea of God.*—For if we examine the idea we have of the incomprehensible Supreme Being, we will find that we come by it in the same way. The complex ideas we have both of God and of separate spirits are made up of the simple ideas we receive from reflection. For example, from what we experience in ourselves we have got the ideas of existence and duration, of knowledge and power, of pleasure and happiness, and of various other qualities and powers that it is better to have than to lack. When we want to frame the most fitting idea we can of the Supreme Being, we enlarge each of these with our idea of infinity. By putting them together, we make our complex idea of God. That the mind has such a power of enlarging some of its ideas received from sensation and reflection has already been shown.

2.23.34 If I find that I know a few things, and some of them, or perhaps all of them, only imperfectly, I can frame an idea of knowing twice as many. I can double that again, as often as I can add to number, and so enlarge my idea of knowledge by extending its range to all things existing or possible. I can do the same with knowing them more perfectly, that is, knowing all their qualities, powers, causes, consequences, relations, and so on, until everything in them, or in any way related to them, is perfectly known. In this way I frame the idea of infinite or boundless knowledge. The same can be done with power, until we come to what we call infinite power. It can also be done with the duration of existence, without beginning or end, and so we frame the idea of an eternal being. We ascribe existence, power, wisdom, and all other perfections (of which we can have any ideas) to that sovereign being we call God, and the degrees or extent to which we ascribe them are all boundless and infinite. In this way we frame the best idea of him our minds are capable of. All this is done, I say, by enlarging the simple ideas we have taken from the operations of our own minds by reflection, or from external things by our senses, to that vastness to which infinity can extend them.

2.23.35 *Idea of God.*—For it is infinity, joined to our ideas of existence, power, knowledge, and so on, that makes the complex idea by which we represent the Supreme Being to ourselves as best we can. In his own essence God is simple and uncompounded, though we certainly do not know that essence, since we do not know the real essence of a pebble, or a fly, or of our own selves. Still, I think I may say that we have no idea of him except a complex one of existence, knowledge, power, happiness, and so on, infinite and eternal. These are all distinct ideas, and some of them, being relative, are in turn compounded of others. All of them, as has been shown, were originally got from sensation and reflection, and they go to make up the idea or notion we have of God.

2.23.36 *No ideas in our complex idea of spirits except those got from sensation or reflection.*—It should further be observed that there is no idea we attribute to God, apart from infinity, which is not also part of our complex idea of other spirits. The only simple ideas we can have of anything other than body are those we receive by reflection from the operation of our own minds. So we can attribute to spirits nothing but what we receive from there. And when we contemplate spirits, all the difference we can make between them lies only in the various extents and degrees of their knowledge, power, duration, happiness, and so on. In our ideas of spirits, as in our ideas of other things, we are limited to those we receive from sensation and reflection. This is evident from the following. However far we advance our ideas of spirits in perfection beyond those of bodies, even to the point of infinity, we still cannot have any idea of the way spirits reveal their thoughts to one another. Yet we must necessarily conclude that separate spirits have a more perfect way of communicating their thoughts than we have, since they are beings with more perfect knowledge and greater happiness than ours. We are obliged to use bodily signs and particular sounds, which are therefore the most widely used, as being the best and quickest we are capable of. But we have no experience in ourselves of immediate communication, and consequently no notion of it at

all. So we have no idea how spirits that do not use words can be masters of their own thoughts with such speed, and still less how spirits that have no bodies can be masters of them and communicate or conceal them at will. Yet we cannot help supposing that they have such a power.

2.23.37 *Recapitulation.*—So we have seen what kind of ideas we have of substances of all kinds, what those ideas consist in, and how we came by them. From this, I think, it is very evident:

First, that all our ideas of the various sorts of substances are nothing but collections of simple ideas, together with the supposition of something to which they belong and in which they subsist. Of this supposed something, however, we have no clear, distinct idea at all.

Second, that all the simple ideas which are united in this way in one common substratum, and make up our complex ideas of the various sorts of substances, are no other than those we have received from sensation or reflection. Consider the substances we think we are most intimately acquainted with, and that come closest to the grasp of our most expansive conceptions. Even in these we cannot go beyond those simple ideas. Then consider the substances that seem most remote from anything we deal with, and that infinitely surpass anything we can perceive in ourselves by reflection or discover in other things by sensation. Even in these we can arrive at nothing but the simple ideas we originally received from sensation and reflection. This is evident in the complex ideas we have of angels, and particularly of God himself.

Third, that most of the simple ideas that make up our complex ideas of substances, when rightly considered, are only powers, however much we are inclined to take them for positive qualities. For example, most of the ideas that make up our complex idea of gold are yellowness, great weight, ductility, fusibility, solubility in *aqua regia*, and so on, all united together in an unknown substratum. All these ideas are nothing but so many relations to other substances. They are not really in the gold considered simply in itself, though they depend on the real and

primary qualities of its internal constitution. It is those qualities that fit gold to act in different ways on various other substances, and to be acted on by them.

COLLECTIVE IDEAS OF SUBSTANCES

The mind joins many substances, like an army or the universe, into one idea.

2.24.1 *One idea.*—Besides these complex ideas of single substances, such as man, horse, gold, violet, apple, and so on, the mind also has complex collective ideas of substances. I call them collective because such ideas are made up of many particular substances considered together and united into one idea, and once joined in this way they are regarded as one. For example, the idea of a collection of men such as makes up an army consists of a great number of distinct substances, yet it is as much one idea as the idea of a man. And the great collective idea of all bodies whatever, signified by the name "world," is as much one idea as the idea of the smallest particle of matter in it. For it is enough for the unity of any idea that it be considered as one representation or picture, however many particulars it is made up of.

2.24.2 *Made by the mind's power of composing.*—The mind makes these collective ideas of substances by its power of composition, uniting a number of simple or complex ideas into one. By the same faculty it makes the complex ideas of particular substances, which consist of an aggregate of various simple ideas united in one substance. And just as the mind, by putting together repeated ideas of unity, makes the collective mode, or complex idea, of any number, such as a score or a gross, so by putting together several particular substances it makes collective ideas of substances, such as a troop, an army, a swarm, a city, a fleet. Everyone finds that he represents each of these to his own mind by one idea, in one view. Under that notion he considers those several things as perfectly one, like one ship or one atom. Nor is it harder to conceive how an army of ten thousand men should make one idea than how a man should make one

idea. The mind can unite the idea of a great number of men into one and consider it as one. That is just as easy as uniting into one particular all the distinct ideas that make up a man and considering them all together as one.

2.24.3 *All artificial things are collective ideas.*—Most artificial things are to be counted among collective ideas of this kind, at least those made up of distinct substances. And in truth, consider all these collective ideas rightly, such as army, constellation, universe, as they are united into so many single ideas. They are only the artificial sketches of the mind. The mind brings things that are very remote and independent of one another into one view, united into one conception and signified by one name, the better to contemplate and talk about them. For there are no things so remote or so contrary that the mind cannot bring them into one idea by this art of composition. This is plain in the idea signified by the name "universe."

RELATION

Locke explains how comparing things gives ideas of relation, and that all relations end in simple ideas.

2.25.1 *What relation is.*—Besides the ideas, simple or complex, that the mind has of things as they are in themselves, there are others it gets from comparing them with one another. When the understanding considers anything, it is not confined to that precise object. It can carry any idea, as it were, beyond itself, or at least look beyond it, to see how it stands in conformity with any other. Sometimes the mind considers one thing in such a way that it brings it, as it were, to another, sets it beside that other, and carries its view from one to the other. This is, as the words indicate, relation and respect. Some names given to positive things indicate that respect, and serve as marks that lead the thoughts beyond the subject named to something distinct from it. These names are what we call relatives, and the things brought together in this way we call related. Thus, when the mind considers Caius as a positive being of a certain kind, it

takes nothing into that idea except what really exists in Caius. For example, when I consider him as a man, I have nothing in my mind but the complex idea of the species man.[11] Likewise, when I say Caius is a white man, I have nothing in mind but the bare consideration of a man who has that white color. But when I give Caius the name "husband," I point to some other person, and when I give him the name "whiter," I point to some other thing. In both cases my thought is led to something beyond Caius, and two things are brought into consideration. Any idea, simple or complex, may be the occasion for the mind to bring two things together in this way and, as it were, view them at once while still considering them distinct. So any of our ideas may be the foundation of relation. In the example just mentioned, the contract and ceremony of marriage with Sempronia is the occasion of the name or relation "husband." The color white is the occasion for saying that he is whiter than freestone.

2.25.2 *Relations without correlative terms not easily perceived.*— Some relations are expressed by relative terms that have other terms answering to them, each pointing to the other, like father and son, bigger and smaller, cause and effect. These and similar relations are very obvious to everyone, and everybody perceives the relation at first sight. For father and son, husband and wife, and other such correlative terms seem to belong so closely to one another, and through custom chime and answer one another so readily in people's memories, that when either of them is named, the thoughts are immediately carried beyond the thing named. Nobody overlooks or doubts a relation where it is so plainly indicated. But where languages have failed to provide correlative names, the relation is not always so easily noticed. "Concubine" is no doubt a relative name, just as "wife" is. But in languages where this word and similar words have no correlative term, people are not so apt to take them to be relative. Such words lack the evident mark of relation found between correlatives, which seem to explain one another and seem

11 Caius and Sempronia are stock names for a man and a woman in Roman legal examples.

unable to exist except together. This is why many names that include evident relations, when properly considered, have been called external denominations.[12] But all names that are more than empty sounds must signify some idea. Sometimes that idea is in the thing to which the name is applied. Then it is positive, and is regarded as united to and existing in the thing so named. At other times it arises from a respect the mind finds between the thing and something distinct from it, with which the mind considers it. Then the name includes a relation.

2.25.3 *Some seemingly absolute terms contain relations.*—There is another sort of relative terms which are not regarded as relative, or even as external denominations. Yet under the form and appearance of signifying something absolute in the subject, they conceal a tacit, though less noticeable, relation. Such are the seemingly positive terms "old," "great," "imperfect," and so on, of which I shall have occasion to speak more fully in the following chapters.

2.25.4 *Relation different from the things related.*—It may further be observed that the ideas of relation may be the same in men who have very different ideas of the things that are related or compared in this way. For example, those who have very different ideas of a man may still agree in the notion of a father. This notion is added on to the substance, or man. It refers only to an act of the thing called man by which he contributes to the generation of one of his own kind, whatever man may be.

2.25.5 *Change of relation may be without any change in the subject.*—The nature of relation, therefore, consists in referring or comparing two things to one another, and from this comparison one or both come to be named. If either of those things is removed or ceases to be, the relation ceases, and so does the name that follows from it, even though the other thing undergoes no alteration at all in itself. For example, today I consider Caius as a father. Tomorrow he ceases to be one simply through the death of his son, without any alteration in himself. Indeed, the same

12 "External denomination" is a scholastic term for a name given to a thing on account of something outside it.

thing can have contrary names at the same time merely because the mind changes the object to which it compares it. For example, Caius, compared with different persons, may truly be said to be older and younger, stronger and weaker, and so on.

2.25.6 *Relation only between two things.*—Whatever does or can exist, or be considered as one thing, is positive. So not only simple ideas and substances but modes too are positive beings, though the parts they consist of are very often relative to one another. The whole, considered together as one thing, produces in us the complex idea of one thing. That idea is in our minds as one picture, though it is an aggregate of various parts, and it goes under one name. Taken this way, the whole is a positive or absolute thing or idea. Thus the parts of a triangle are relative when compared with one another, yet the idea of the whole triangle is a positive, absolute idea. The same may be said of a family, a tune, and so on. For there can be no relation except between two things considered as two things. In relation there must always be two ideas or things, either really separate in themselves or considered as distinct, and then a ground or occasion for comparing them.

2.25.7 *All things capable of relation.*—Concerning relation in general, the following points may be considered. First, there is no single thing that is not capable of an almost infinite number of considerations with reference to other things, whether it is a simple idea, substance, mode, or relation, or the name of any of them. This therefore makes up no small part of men's thoughts and words. For example, one single man may at once be involved in and sustain all the following relations, and many more: father, brother, son, grandfather, grandson, father-in-law, son-in-law, husband, friend, enemy, subject, general, judge, patron, client, professor, European, Englishman, islander, servant, master, owner, captain, superior, inferior, bigger, smaller, older, younger, contemporary, like, unlike, and so on, to an almost infinite number. For he is capable of as many relations as there can be occasions for comparing him to other things, in any kind of agreement, disagreement, or respect whatever. As I said, rela-

tion is a way of comparing or considering two things together and giving one or both of them some name from that comparison. Sometimes the relation itself is given a name as well.

2.25.8 *The ideas of relations are often clearer than those of the subjects related.*—Second, it may further be considered concerning relation that it is not contained in the real existence of things, but is something extraneous and added on. Even so, the ideas that relative words stand for are often clearer and more distinct than the ideas of the substances to which they belong. The notion we have of a father or a brother is a great deal clearer and more distinct than the one we have of a man. Or, if you like, it is easier to have a clear idea of paternity than of humanity. And I can conceive what a friend is much more easily than what God is. For the knowledge of one action, or one simple idea, is often enough to give me the notion of a relation. To know any substantial being, however, an accurate collection of various ideas is needed. A man who compares two things can hardly be supposed not to know in what respect he is comparing them. So when he compares any things, he cannot help having a very clear idea of that relation. The ideas of relations, then, are at least capable of being more perfect and distinct in our minds than those of substances. It is commonly hard to know all the simple ideas that are really in any substance. But it is usually easy enough to know the simple ideas that make up any relation I think of or have a name for. For example, if we compare two men with reference to one common parent, it is very easy to frame the idea of brothers without yet having a perfect idea of a man. Meaningful relative words, like others, stand only for ideas, and these are all either simple or made up of simple ones. So to know the precise idea a relative term stands for, it is enough to have a clear conception of the foundation of the relation. And this can be done without having a perfect and clear idea of the thing the relation is attributed to. Thus, having the notion that one laid the egg out of which the other was hatched, I have a clear idea of the relation of dam and chick between the

two cassowaries in St. James's Park. Yet perhaps I have only a very obscure and imperfect idea of those birds themselves.[13]

2.25.9 *Relations all terminate in simple ideas.*—Third, there are a great many respects in which things may be compared with one another, and so a multitude of relations. Yet they all terminate in, and are concerned with, those simple ideas of sensation or reflection which I take to be the whole materials of all our knowledge. To make this clear, I shall show it in the most important relations we have any notion of, including some that seem most remote from sense or reflection. These too will turn out to have their ideas from sense or reflection. That will leave it beyond doubt that the notions we have of them are only certain simple ideas, and so originally derived from sense or reflection.

2.25.10 *Terms leading the mind beyond the subject named are relative.*—Fourth, relation is the considering of one thing together with another that is external to it. So it is evident that relative words are all those that necessarily lead the mind to ideas other than those supposed really to exist in the thing to which the words are applied. For example, a man black, merry, thoughtful, thirsty, angry, extended: these and similar terms are all absolute. They neither signify nor indicate anything except what does exist, or is supposed really to exist, in the man so named. But father, brother, king, husband, blacker, merrier, and so on, are words that, together with the thing they name, also imply something else separate from and external to the existence of that thing.

2.25.11 *Conclusion.*—I have now laid down these premises about relation in general. Next I shall show, in some instances, how all the ideas we have of relation are made up, like the others, only of simple ideas. All of them, however refined or remote from sense they seem, terminate at last in simple ideas. I shall begin with the most comprehensive relation, which involves all things that do or can exist: the relation of cause and effect. I shall now

13 Cassowaries, large flightless birds of New Guinea and Australia, were among the exotic animals kept in the royal collection in St. James's Park, London.

consider how the idea of it is derived from the two sources of all our knowledge, sensation and reflection.

CAUSE AND EFFECT

Locke derives cause and effect, creation, generation and alteration, and relations of time and place from experience.

2.26.1 *Where these ideas come from.*—Our senses take notice of the constant changes of things, and in doing so we cannot help observing that various particular qualities and substances begin to exist. We also observe that they receive their existence from the proper application and operation of some other being. From this observation we get our ideas of cause and effect. What produces any simple or complex idea we denote by the general name "cause," and what is produced we call "effect." Thus, we find that in the substance we call wax, fluidity is constantly produced by the application of a certain degree of heat. Fluidity is a simple idea that was not in the wax before. So we call the simple idea of heat, in relation to fluidity in wax, its cause, and fluidity the effect. Likewise, we find that the substance wood, which is a certain collection of simple ideas going by that name, is turned by the application of fire into another substance called ashes. Ashes are another complex idea, consisting of a collection of simple ideas quite different from the complex idea we call wood. So we consider fire, in relation to ashes, as cause, and the ashes as effect. So whatever we consider as contributing or operating to produce any particular simple idea, or collection of simple ideas, whether substance or mode, that did not exist before, thereby has in our minds the relation of a cause, and we name it so.

2.26.2 *Creation, generation, making, alteration.*—We have thus got the notion of cause and effect from what our senses can discover in the operations of bodies on one another. Namely, a cause is what makes any other thing begin to be, whether simple idea, substance, or mode, and an effect is what had its beginning from

some other thing. With this notion, the mind finds no great difficulty in dividing the various origins of things into two sorts.

First, when the thing is wholly new, so that no part of it ever existed before, as when a new particle of matter, which previously had no being, begins to exist in the world of nature. This we call creation.

Second, when a thing is made up of particles that all existed before, but the thing itself is new. It is constituted of pre-existing particles which, considered all together, make up a collection of simple ideas that had no existence before, as this man, this egg, rose, or cherry, and so on. Sometimes this refers to a substance produced in the ordinary course of nature by an internal principle, which is set to work by some external agent or cause and received from it, and which works in insensible ways, which we do not perceive. This we call generation. When the cause is external, and the effect is produced by a perceptible separation or juxtaposition of discernible parts, we call it making. All artificial things are of this kind. When any simple idea is produced that was not in the subject before, we call it alteration. Thus a man is generated and a picture made, and either of them is altered when any new perceptible quality or simple idea is produced in it that was not there before. The things thus made to exist, which were not there before, are effects, and the things that operated to bring them into existence are causes. In this and all other cases we may observe that the notion of cause and effect arises from ideas received by sensation or reflection. However comprehensive this relation is, it terminates at last in them. For to have the idea of cause and effect, it is enough to consider any simple idea or substance as beginning to exist through the operation of some other, without knowing the manner of that operation.

2.26.3 *Relations of time.*—Time and place are also the foundations of very extensive relations, and all finite beings at least are involved in them. I have already shown elsewhere how we get these ideas, so it may be enough here to point out that most of the names things receive from time are only relations. Suppose

someone says that Queen Elizabeth lived sixty-nine years and reigned forty-five. These words convey only the relation of that duration to some other. They mean no more than that the duration of her existence was equal to sixty-nine annual revolutions of the sun, and the duration of her reign to forty-five. The same holds for all words answering the question "how long?" Again, "William the Conqueror invaded England about the year 1066" means this: take the duration from our Savior's time until now as one entire great length of time, and the date shows how far this invasion was from the two ends of it. And so do all words of time answering the question "when?" They show only the distance of some point of time from the period of a longer duration from which we measure, and to which we therefore consider it related.

2.26.4 Besides these, there are yet other words of time that are ordinarily thought to stand for positive ideas. When considered, they will be found to be relative. Such are "young," "old," and so on, which include and indicate the relation something has to a certain length of duration of which we have the idea in our minds. Thus, suppose we have settled in our thoughts the idea that the ordinary duration of a man is seventy years. When we say a man is young, we mean that his age is still only a small part of what men usually reach. When we call him old, we mean that his duration has run out almost to the end of what men do not usually exceed. So it is only a matter of comparing the particular age, or duration, of this or that man with the idea of duration we have in our minds as ordinarily belonging to that sort of animal. This is plain from the way these names are applied to other things. A man is called young at twenty, and very young at seven. Yet we call a horse old at twenty, and a dog at seven. In each case we compare their age with different ideas of duration, settled in our minds as belonging to these different sorts of animals in the ordinary course of nature. But we do not call the sun and stars old, though they have outlasted many generations of men, because we do not know what period God has set for that sort of being. This term properly belongs to things that we

can observe coming to an end, in the ordinary course of things, through natural decay within a certain period of time. For such things we have in our minds, as it were, a standard with which we can compare the various parts of their duration, and by the relation they bear to it we call them young or old. We therefore cannot do this with a ruby or a diamond, things whose usual lifespans we do not know.

2.26.5 *Relations of place and extension.*—The relation things have to one another in their places and distances is also very easy to observe, as in above, below, a mile from Charing Cross, in England, and in London. But as with duration, so with extension and bulk, there are some relative ideas which we signify by names thought to be positive. "Great" and "little," for instance, are really relations. Here too we have settled in our minds, by observation, ideas of the size of various species of things, taken from the ones we have been most used to. We then make these ideas, as it were, the standards by which to name the bulk of others.[14] Thus we call an apple great if it is bigger than the ordinary sort we have been used to. We call a horse little if it does not come up to the size of the idea we have in our minds as ordinarily belonging to horses. And a horse that is a great one to a Welshman is only a little one to a Fleming. From the different breeds of their countries, the two of them have taken ideas of different sizes, and they compare with these ideas, and name their great and their little in relation to them.

2.26.6 *Absolute terms often stand for relations.*—Likewise "weak" and "strong" are only relative names of power, compared with some ideas we have at the time of greater or lesser power. Thus when we say "a weak man," we mean one who has less strength or power to move than men usually have, or than those of his size usually have. This is comparing his strength with the idea we have of the usual strength of men, or of men of that size. It is the same when we say that creatures are all weak things. "Weak" there is only a relative term, signifying the disproportion

14 Charing Cross, in Westminster, was the conventional point from which distances from London were measured.

between the power of God and that of creatures. And so a great many words in ordinary speech (perhaps the greater part) stand only for relations, though at first sight they seem to have no such meaning. For example: "the ship has necessary stores." "Necessary" and "stores" are both relative words. The first relates to the accomplishment of the intended voyage, and the second to future use. How all these relations are confined to, and terminate in, ideas derived from sensation or reflection is too obvious to need any explanation.

IDENTITY AND DIVERSITY

Locke explains identity of atoms, masses, plants, animals and man, and when things count as the same.

2.27.1 *What identity consists in.*—The mind often compares things on another occasion as well, namely, their very being. When we consider anything as existing at some particular time and place, we compare it with itself existing at another time. From this we form the ideas of identity and diversity. When we see anything in some place at some instant of time, we are sure (whatever it may be) that it is that very thing. It is not another thing existing at that same time in another place, however alike and indistinguishable the two may be in all other respects. And identity consists in this: the ideas it is attributed to do not vary at all from what they were at the moment of their former existence which we are considering, and with which we compare the present. For we never find, nor conceive it possible, that two things of the same kind should exist in the same place at the same time. So we rightly conclude that whatever exists anywhere at any time excludes everything of the same kind, and is there alone. Therefore, when we ask whether anything is the same or not, the question always refers to something that existed at such a time in such a place. At that instant it was certainly the same as itself and no other. From this it follows that one thing cannot have two beginnings of existence, nor two things one beginning. It is impossible for two things of the same kind to be or exist at

the same instant in the very same place, or for one and the same thing to exist in different places. Therefore what had one beginning is the same thing, and what had a beginning different from it in time and place is not the same, but diverse. What has made this relation difficult has been the lack of care and attention in forming precise notions of the things to which it is attributed.

2.27.2 *Identity of substances.*—We have ideas of only three sorts of substances: (1) God, (2) finite intelligences, (3) bodies. First, God is without beginning, eternal, unalterable, and everywhere, so there can be no doubt about his identity. Second, each finite spirit began to exist at a determinate time and place, so the relation to that time and place will always determine its identity as long as it exists. Third, the same holds for every particle of matter: as long as no matter is added to it or taken from it, it is the same. These three sorts of substances, as we call them, do not exclude one another from the same place. Still, we cannot conceive otherwise than that each of them must necessarily exclude any other of the same kind from the same place. If it were not so, the notions and names of identity and diversity would be pointless, and there could be no such distinction between substances, or between any other things. For example, if two bodies could be in the same place at the same time, those two parcels of matter would have to be one and the same, whether large or small. Indeed, all bodies would have to be one and the same. For by the same reasoning by which two particles of matter may be in one place, all bodies may be in one place. And once that can be supposed, it does away with the distinction of identity and diversity, of one and more, and makes it ridiculous. But it is a contradiction that two or more should be one. So identity and diversity are well-founded relations and ways of comparing, and useful to the understanding.

Identity of modes.—All other things are only modes or relations that ultimately terminate in substances. So the identity and diversity of each particular existence of them will also be determined in the same way. But some things exist in succession, such as the actions of finite beings, for example motion

and thought, both of which consist in a continuous train of succession. There can be no question about the diversity of these things. Each of them perishes the moment it begins, so they cannot exist at different times or in different places, as permanent beings can exist at different times in distant places. Therefore no motion or thought, considered at different times, can be the same, since each part of it has a different beginning of existence.

2.27.3 *Principium individuationis.*—From what has been said, it is easy to discover the thing so much inquired after, the *principium individuationis*. It is plainly existence itself, which fixes a being of any sort to a particular time and place that cannot be shared by two beings of the same kind. This seems easier to conceive in simple substances or modes. When reflected on, however, it is no more difficult in compound ones, if we take care what it is applied to. For example, let us suppose an atom, that is, a continuous body under one unchangeable surface, existing at a definite time and place. It is evident that, considered at any instant of its existence, it is at that instant the same as itself.[15] For being at that instant what it is and nothing else, it is the same, and must remain so as long as its existence continues. For so long it will be the same and no other. In the same way, if two or more atoms are joined together into the same mass, each of those atoms will be the same, by the rule just given. While they exist united together, the mass, consisting of the same atoms, must be the same mass or the same body, however differently the parts are jumbled. But if one of these atoms is taken away, or one new one added, it is no longer the same mass or the same body. In the case of living creatures, their identity depends not on a mass of the same particles but on something else. For in them a change in large parcels of matter does not alter identity. An oak growing from a sapling to a great tree, and then lopped, is still the same oak. A colt grown up into a horse, sometimes fat, sometimes lean, is all the while the same horse. Yet in both

15 Latin: "the principle of individuation," the scholastic term for whatever makes a thing this particular individual.

cases there may be an obvious change of parts. So in truth neither of them is the same mass of matter, though one of them is truly the same oak and the other truly the same horse. The reason is that in these two cases, a mass of matter and a living body, identity is not applied to the same thing.

2.27.4 *Identity of plants.*—We must therefore consider how an oak differs from a mass of matter. It seems to me that the difference lies in this. The one is only the cohesion of particles of matter united in any way whatever. The other is such an arrangement of them as makes up the parts of an oak, and such an organization of those parts as is fit to receive and distribute nourishment, so as to continue and form the wood, bark, leaves, and so on, of an oak. In this consists vegetable life. That, then, is one plant which has such an organization of parts in one coherent body sharing one common life. So it goes on being the same plant as long as it shares the same life, even though that life is passed on to new particles of matter vitally united to the living plant, in a similar continued organization suited to that sort of plant. For this organization, being at any one instant in some one collection of matter, is in that particular concrete thing distinguished from every other. It is that individual life which exists continuously from that moment both forward and backward, in the same continuity of imperceptibly succeeding parts united to the living body of the plant. It therefore has that identity which makes it the same plant, and makes all its parts parts of the same plant, for as long as they exist united in that continued organization which is fit to convey that common life to all the parts so united.

2.27.5 *Identity of animals.*—The case is not so different in animals that anyone cannot see from this what makes an animal and keeps it the same. We have something like this in machines, which may serve to illustrate it. For example, what is a watch? It is plainly nothing but a suitable organization or construction of parts for a certain end, which it is capable of attaining when a sufficient force is applied to it. Suppose this machine were one continuous body, all of whose organized parts were repaired,

increased, or diminished by a constant addition or separation of imperceptible parts, with one common life. We would then have something very like the body of an animal, with this difference. In an animal, the fitness of the organization and the motion in which life consists begin together, the motion coming from within. In machines, the force comes perceptibly from outside, and it is often absent when the organ is in order and well fitted to receive it.

2.27.6 *Identity of man.*—This also shows what the identity of the same man consists in: namely, in nothing but a participation in the same continued life, by constantly fleeting particles of matter succeeding one another, vitally united to the same organized body. As with other animals, the identity of man lies in one suitably organized body, taken at any one instant and continued from then on under one organization of life in various successively fleeting particles of matter united to it. Anyone who places it in anything else will find it hard to make an embryo and a man of years the same man, or a man insane and the same man sane,, on any supposition that will not also make it possible for Seth, Ishmael, Socrates, Pilate, St. Augustine, and Cesare Borgia to be the same man.[16] But suppose identity of soul alone makes the same man, and there is nothing in the nature of matter to prevent the same individual spirit from being united to different bodies. Then it will be possible that those men, living in distant ages and of different temperaments, may have been the same man. That way of speaking must come from a very strange use of the word man, applied to an idea from which body and shape are excluded. And that way of speaking would fit even worse with the notions of those philosophers who accept transmigration. They hold that the souls of men may, for their misdeeds, be thrust down into the bodies of beasts, as fit dwellings, with organs suited to satisfying their brutish inclinations. And yet I think nobody, even if he were sure that the soul of Heliogabalus

16 A deliberately mixed list: Seth, son of Adam; Ishmael, son of Abraham; Pontius Pilate; Augustine of Hippo; and Cesare Borgia (1475–1507), the notorious Renaissance prince.

was in one of his hogs, would say that hog was a man, or Heliogabalus.[17]

2.27.7 *Identity suited to the idea.*—It is not, therefore, unity of substance that covers all sorts of identity or will settle it in every case. To conceive and judge of it correctly, we must consider what idea the word it is applied to stands for. It is one thing to be the same substance, another to be the same man, and a third to be the same person, if person, man, and substance are three names standing for three different ideas. For as the idea belonging to that name is, so must the identity be. If this had been attended to a little more carefully, it might have prevented a great deal of the confusion that often arises about this matter, with no small apparent difficulties. This is especially true of personal identity, which we shall therefore consider a little next.

2.27.8 *Same man.*—An animal is a living organized body. As we have observed, the same animal is frequently the same continued life communicated to different particles of matter, as they successively happen to be united to that organized living body.

THE RATIONAL PARROT

Locke tells Temple's story of Prince Maurice's talking parrot to show that "man" means a certain bodily shape.

Whatever is said about other definitions, fair-minded observation puts it beyond doubt that the idea in our minds, of which the sound man in our mouths is the sign, is nothing but the idea of an animal of a certain form. For I think I may be confident of this. Anyone who saw a creature of his own shape and build would still call him a man, even if it had no more reason all its life than a cat or a parrot. And anyone who heard a cat or a parrot converse, reason, and philosophize would call it, or think it, nothing but a cat or a parrot. He would say that the one was a dull, irrational man and the other a very intelligent, rational parrot. An account we have from an author of great repute is

17 Heliogabalus (Elagabalus), Roman emperor 218–222, was proverbial for depravity.

enough to support the supposition of a rational parrot. His words are these[18]:[19]

"I had a mind to hear from Prince Maurice's own mouth the truth of a common but widely believed story, which I had heard so often from many others. It concerned an old parrot he had in Brazil during his government there, which spoke, and asked and answered ordinary questions like a rational creature, so that the people in his retinue there generally concluded it was witchcraft or possession. One of his chaplains, who lived long afterward in Holland, could never from that time on stand a parrot, but said they all had a devil in them. I had heard many details of this story, affirmed by people it would be hard to disbelieve, which made me ask Prince Maurice what there was to it. He said, with his usual plainness and dryness in conversation, that there was something true, but a great deal false, in what had been reported. I asked him what the true part was. He told me, briefly and coolly, that he had heard of such an old parrot when he was in Brazil. He believed nothing of it, and it was a good way off, yet he had enough curiosity to send for it. It was a very large and a very old one. When it first came into the room where the prince was, with a great many Dutchmen around him, it said at once, What a company of white men are here! They pointed to the prince and asked it who it thought that man was. It answered, Some general or other. When they brought it close to him, he asked it, [20]D'ou venez vous? It answered, De Marinnan. The prince, A qui estes vous? The parrot, A un Portugais. The prince, Que fais tu la? The parrot, Je gardez les poulles. The prince laughed and said, Vous gardez les poulles? The parrot answered,

18 LOCKE'S NOTE. Memoirs of What Passed in Christendom from 1672 to 1679, p. 57/392.

19 The author is Sir William Temple (1628–1699), English diplomat and essayist. The prince is John Maurice (Johan Maurits) of Nassau-Siegen, governor of Dutch Brazil 1636–1644.

20 LOCKE'S NOTE. Where do you come from? It answered, From Marinnan. The prince, To whom do you belong? The parrot, To a Portuguese. The prince, What do you do there? The parrot, I look after the chickens. The prince laughed and said, You look after the chickens? The parrot answered, Yes, I do, and I know well enough how to do it.

Oui, moi, et je scai bien faire. Then it made, four or five times, the clucking sound people make to chickens when they call them. I set down the words of this fine dialogue in French, just as Prince Maurice spoke them to me.[21] I asked him what language the parrot spoke, and he said Brazilian. I asked whether he understood Brazilian. He said no, but he had taken care to have two interpreters with him, one a Dutchman who spoke Brazilian and the other a Brazilian who spoke Dutch. He had asked them separately and privately, and both of them agreed in telling him exactly what the parrot had said. I could not help telling this odd story, because it is so out of the ordinary, and at first hand, and may pass for a good one. For I dare say this prince at least believed himself in all he told me, having always been reputed a very honest and pious man. I leave it to naturalists to reason about it, and to other men to believe what they please about it. However, it is perhaps not amiss sometimes to relieve or enliven a busy scene with such digressions, whether to the purpose or not."

Same man.—I have taken care that the reader should have the story in full in the author's own words, because he seems to me not to have thought it incredible. He was an able man, with merit enough to justify all the good things he says of himself. It cannot be imagined that such a man would take so much trouble, in a place where it had nothing to do with his subject, to pin a story so firmly on a man he mentions as his friend, and on a prince in whom he acknowledges very great honesty and piety at that, if he himself thought the story incredible. For then he could not help thinking it ridiculous too. Plainly, the prince who vouches for this story, and our author who relates it from him, both call this talker a parrot; and I ask anyone else who thinks such a story fit to be told this question. Suppose this parrot and all its kind had always talked as, on a prince's word, this one did. Would they not, I say, have passed for a race of rational animals? And yet, for all that, would they have been allowed to be men

21 Marinnan is Maranhão, in northern Brazil. The "Brazilian" language of the next paragraph is presumably Tupi, the common language of the coast.

and not parrots? For I presume that, in most people's sense, it is not the idea of a thinking or rational being alone that makes up the idea of a man. It is also the idea of a body of such-and-such a shape joined to it. And if that is the idea of a man, then the same successive body, not shifted all at once, must go to the making of the same man, as well as the same immaterial spirit.

PERSONAL IDENTITY

Locke defines a person and argues that personal identity consists in consciousness, not in sameness of substance.

2.27.9 *Personal identity.*—With this premised, to find what personal identity consists in, we must consider what person stands for. This, I think, is a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places. It does this only by that consciousness which is inseparable from thinking and, as it seems to me, essential to it. For it is impossible for anyone to perceive without perceiving that he does perceive. When we see, hear, taste, smell, feel, meditate, or will anything, we know that we do so. It is always this way with our present sensations and perceptions, and by this everyone is to himself what he calls self. In this case we do not consider whether the same self is continued in the same substance or in different ones. For consciousness always accompanies thinking, and it is what makes everyone to be what he calls self, and so distinguishes him from all other thinking things. In this alone, then, consists personal identity, that is, the sameness of a rational being. And as far as this consciousness can be extended backward to any past action or thought, so far reaches the identity of that person. It is the same self now as it was then, and that action was done by the same self as this present one that now reflects on it.

2.27.10 *Consciousness makes personal identity.*—But it is further asked whether it is the same identical substance. Few would think they had reason to doubt this if those perceptions, with their consciousness, always remained present in the mind. For

then the same thinking thing would always be consciously present and, it would be thought, evidently the same to itself. But what seems to create the difficulty is this: that this consciousness is always interrupted by forgetfulness. There is no moment of our lives in which we have the whole train of all our past actions before our eyes in one view. Even the best memories lose sight of one part while they are viewing another. Sometimes, indeed for the greater part of our lives, we do not reflect on our past selves at all, being intent on our present thoughts. And in sound sleep we have no thoughts at all, or at least none with that consciousness which marks our waking thoughts. In all these cases, I say, our consciousness is interrupted and we lose sight of our past selves. So doubts are raised whether we are the same thinking thing, that is, the same substance, or not. However reasonable or unreasonable that doubt may be, it does not concern personal identity at all. The question is what makes the same person. It is not whether it is the same identical substance that always thinks in the same person, which in this case does not matter at all. Different substances are united into one person by the same consciousness (where they do share in it), just as different bodies are united into one animal by the same life. The animal's identity is preserved through that change of substances by the unity of one continued life. For it is the same consciousness that makes a man be himself to himself. So personal identity depends on that alone, whether it is attached solely to one individual substance or can be continued in a succession of several substances. For as far as any intelligent being can repeat the idea of any past action with the same consciousness it had of it at first, and with the same consciousness it has of any present action, so far it is the same personal self. For it is by the consciousness it has of its present thoughts and actions that it is self to itself now. So it will be the same self as far as the same consciousness can extend to actions past or to come. Neither distance of time nor change of substance would make it two persons, any more than a man is two men by wearing different clothes today from those he wore yesterday, with a long or a

short sleep between. The same consciousness unites those distant actions into the same person, whatever substances contributed to producing them.

2.27.11 *Personal identity in change of substances.*—We have some kind of evidence that this is so in our very bodies. While their particles are vitally united to this same thinking conscious self, we feel when they are touched, and are affected by and conscious of good or harm that happens to them. All such particles are a part of ourselves, that is, of our thinking conscious self. Thus the limbs of his body are to everyone a part of himself. He sympathizes with them and is concerned for them. Cut off a hand, and so separate it from the consciousness he had of its heat, cold, and other affections. It is then no longer a part of what is himself, any more than the remotest part of matter. Thus we see that the substance of which the personal self consisted at one time may be varied at another without any change of personal identity. For there is no question about its being the same person, even though the limbs which were just now a part of it are cut off.

2.27.12 But the question is: "Whether, if the same substance which thinks is changed, it can be the same person; or whether, while remaining the same, it can be different persons?"

Whether in the change of thinking substances.—To this I answer, first, that this can be no question at all for those who place thought in a purely material animal constitution, without any immaterial substance. For whether their supposition is true or not, they plainly conceive personal identity to be preserved in something other than identity of substance. Animal identity, in the same way, is preserved in identity of life and not of substance. Those who place thinking in an immaterial substance only must therefore, before they can deal with these men, meet a challenge. They must show why personal identity cannot be preserved through a change of immaterial substances, or a variety of particular immaterial substances, just as animal identity is preserved through a change of material substances, or a variety of particular bodies. The only escape is to say that it is one

immaterial spirit that makes the same life in animals, as it is one immaterial spirit that makes the same person in men. The Cartesians at least will not admit that, for fear of making animals thinking things too.

2.27.13 Next, as to the first part of the question: "Whether, if the same thinking substance (supposing that only immaterial substances think) is changed, it can be the same person?" I answer that this cannot be resolved except by those who know what kind of substances they are that think, and whether the consciousness of past actions can be transferred from one thinking substance to another. I grant that if the same consciousness were the same individual action, it could not. But it is only a present representation of a past action. So it remains to be shown why it may not be possible for something to be represented to the mind as having been, which really never was. How far the consciousness of past actions is attached to any individual agent, so that another cannot possibly have it, will therefore be hard for us to determine. We would first need to know what kind of action it is that cannot be done without a reflex act of perception accompanying it, and how it is performed by thinking substances, which cannot think without being conscious of it. But what we call the same consciousness is not the same individual act. So it will be difficult to conclude from the nature of things why one intellectual substance may not have represented to it, as done by itself, what it never did, and what was perhaps done by some other agent. Why, I say, may such a representation not possibly exist without any reality of matter of fact? Various representations in dreams exist in just that way, and yet we take them for true while we are dreaming. Until we have clearer views of the nature of thinking substances, we shall best put down the fact that it never is so to the goodness of God. As far as the happiness or misery of any of his sentient creatures is concerned in it, he will not, by a fatal error of theirs, transfer from one to another that consciousness which brings reward or punishment with it. How far this may be an argument against those who would place thinking in a system of fleeting animal spirits,

I leave for consideration. But still, to return to the question before us, one thing must be granted. The same consciousness (which, as has been shown, is quite a different thing from the same numerical figure or motion in a body) may be transferable from one thinking substance to another. If it is, it will be possible for two thinking substances to make only one person. For if the same consciousness is preserved, whether in the same or in different substances, personal identity is preserved.

2.27.14 Then there is the second part of the question: "Whether, the same immaterial substance remaining, there may be two distinct persons?" This question seems to me to rest on the following. Can the same immaterial being, conscious of the actions of its past duration, be wholly stripped of all consciousness of its past existence, and lose it beyond any power of ever getting it back? Could it then, as it were beginning a new account from a new period, have a consciousness that cannot reach beyond this new state? All those who hold pre-existence are evidently of this mind. They allow that the soul has no remaining consciousness of what it did in its pre-existing state, whether wholly separate from a body or animating some other body. And if they did not, experience would plainly be against them. Personal identity reaches no further than consciousness reaches. So a pre-existent spirit that has not continued for so many ages in a state of silence must necessarily make different persons. Suppose a Christian Platonist or Pythagorean should think that, since God ended all his works of creation on the seventh day, his soul has existed ever since. Suppose he should imagine that it has passed through several human bodies. I once met one who was persuaded his had been the soul of Socrates. How reasonably, I will not dispute. This much I know: in the post he filled, which was no insignificant one, he was reputed a very rational man, and the press has shown that he did not lack ability or learning. Would anyone say that he, not being conscious of any of Socrates's actions or thoughts, could be the same person as Socrates? Let anyone reflect on himself and conclude that he has in himself an immaterial spirit. This is what thinks in him and

keeps him the same through the constant change of his body, and it is what he calls himself. Let him also suppose it to be the same soul that was in Nestor or Thersites at the siege of Troy. (As far as we know anything about souls, they are by nature indifferent to any parcel of matter, so the supposition has no evident absurdity in it.) It may have been that soul, just as well as it is now the soul of any other man. But he now has no consciousness of any of the actions of either Nestor or Thersites. Does he, or can he, conceive himself to be the same person as either of them?[22] Can he be concerned in the actions of either of them, attribute them to himself, or think them his own, any more than the actions of any other man who ever existed? This consciousness does not reach any of the actions of either of those men. So he is no more one self with either of them than if the soul or immaterial spirit that now animates him had been created, and had begun to exist, when it began to animate his present body. That would hold however true it might be that the spirit that animated Nestor's or Thersites's body was numerically the same one that now animates his. For this would no more make him the same person as Nestor than if some of the particles of matter that were once a part of Nestor were now a part of this man. The same immaterial substance without the same consciousness does not make the same person by being united to any body. It makes the same person no more than the same particle of matter without consciousness, united to any body, does. But let him once find himself conscious of any of the actions of Nestor, and he then finds himself the same person as Nestor.

2.27.15 In this way we may be able, without any difficulty, to conceive the same person at the resurrection, though in a body not exactly the same in build or parts as the one he had here. For the same consciousness goes along with the soul that inhabits it. But still, in a change of bodies, the soul alone would hardly be enough to make the same man for anyone, except for someone who makes the soul the man. Suppose the soul of a

22 In Homer's *Iliad*, Nestor is the wise old king of Pylos and Thersites the ugly, railing common soldier.

prince, carrying with it the consciousness of the prince's past life, should enter and animate the body of a cobbler as soon as his own soul had deserted it. Everyone sees that he would be the same person as the prince, accountable only for the prince's actions. But who would say it was the same man? The body, too, goes into the making of the man. In this case, I suppose, it would decide the man for everybody. The soul, with all its princely thoughts about it, would not make another man. He would be the same cobbler to everyone except himself. I know that in the ordinary way of speaking, the same person and the same man stand for one and the same thing. And indeed everyone will always be free to speak as he pleases, to apply whatever articulate sounds to whatever ideas he thinks fit, and to change them as often as he pleases. But when we want to inquire what makes the same spirit, man, or person, we must fix the ideas of spirit, man, or person in our minds. Once we have settled with ourselves what we mean by them, it will not be hard to determine, for any of them or the like, when it is the same and when not.

2.27.16 *Consciousness makes the same person.*—The same immaterial substance or soul does not by itself, wherever it may be and in whatever state, make the same man. Yet consciousness plainly does something, as far as it can ever be extended, even to ages past. It unites existences and actions very remote in time into the same person, just as it does the existences and actions of the moment immediately before. So whatever has the consciousness of present and past actions is the same person to whom they both belong. Suppose I were as conscious of having seen the ark and Noah's flood as I am of having seen the Thames overflow last winter, or of writing now. Then I could no more doubt that I who write this now, who saw the Thames overflow last winter, and who viewed the flood at the general deluge, was one and the same self, place that self in whatever substance you please, than I could doubt that I who write this am now, while I write, the same myself that I was yesterday (whether or not I consist of all the same substance, material or immaterial). For

as to this point of being the same self, it does not matter whether this present self is made up of the same substances or of others. Suppose an action done a thousand years ago is appropriated to me now by this self-consciousness. I am then as much concerned in it, and as justly accountable for it, as I am for what I did the moment before.

2.27.17 *Self depends on consciousness.*—Self is that conscious thinking thing (whatever substance it is made of, spiritual or material, simple or compound, it does not matter) which is sensible or conscious of pleasure and pain, capable of happiness or misery, and so is concerned for itself as far as that consciousness extends. Thus everyone finds that, while it is included within that consciousness, the little finger is as much a part of himself as whatever is most so. Suppose this little finger were cut off, and this consciousness went along with it and left the rest of the body. Then evidently the little finger would be the person, the same person, and self would have nothing to do with the rest of the body. In this case, when one part is separated from another, it is the consciousness that goes along with the substance which makes the same person and constitutes this inseparable self. It is the same with regard to substances remote in time. Whatever the consciousness of this present thinking thing can join itself to makes the same person, and is one self with it, and with nothing else. So it attributes to itself, and owns as its own, all the actions of that thing, as far as that consciousness reaches and no further. Everyone who reflects will perceive this.

2.27.18 *Objects of reward and punishment.*—On this personal identity is founded all the right and justice of reward and punishment. For happiness and misery are what everyone is concerned about for himself, and it does not matter to him what becomes of any substance not joined to or affected by that consciousness. This is evident in the example I gave just now. If the consciousness went along with the little finger when it was cut off, that would be the same self which was concerned for the whole body yesterday, as making part of itself. It cannot help admitting that body's actions of yesterday as its own now. But

suppose the same body should still live and, immediately upon the separation of the little finger, have its own particular consciousness, of which the little finger knew nothing. Then the finger would not be concerned for that body at all as a part of itself. Nor could it own any of the body's actions, or have any of them imputed to it.

2.27.19 This may show us what personal identity consists in. It is not identity of substance but, as I have said, identity of consciousness. If Socrates and the present mayor of Queenborough agree in this, they are the same person. If the same Socrates waking and sleeping does not share the same consciousness, Socrates waking and Socrates sleeping are not the same person. Suppose we punished Socrates waking for what sleeping Socrates thought, and waking Socrates was never conscious of. That would be no more just than to punish one twin for something his twin brother did and he knew nothing of, because their outsides were so alike that they could not be told apart. Such twins have been seen.[23]

2.27.20 But perhaps it will still be objected: suppose I wholly lose the memory of some parts of my life beyond any possibility of retrieving them, so that perhaps I shall never be conscious of them again. Am I not still the same person who did those actions and had those thoughts that I was once conscious of, though I have now forgotten them? To this I answer that we must notice here what the word "I" is applied to. In this case it is only the man. And since the same man is presumed to be the same person, "I" is here easily supposed to stand also for the same person. But it may be possible for the same man to have distinct, incommunicable consciousness at different times. If so, the same man would beyond doubt make different persons at different times. This, we see, is the sense of mankind in the most solemn declarations of their opinions. Human laws do not punish the mentally ill man for the sane man's actions, nor the sane man for what the mentally ill man did, and so they make them

23 Queenborough is a small borough in Kent, chosen as an obscure contrast to Socrates.

two persons. This is to some extent explained by our way of speaking in English, when we say that someone is not himself, or is beside himself. These phrases suggest that those who use them now, or at least those who first used them, thought that the self was changed, and that the selfsame person was no longer in that man.

2.27.21 *Difference between identity of man and person.*—But still it is hard to conceive that Socrates, the same individual man, should be two persons. To help us a little with this, we must consider what is meant by Socrates, or the same individual man.

First, it must be either the same individual, immaterial, thinking substance: in short, the same numerical soul, and nothing else.

Second, or the same animal, without any regard to an immaterial soul.

Third, or the same immaterial spirit united to the same animal.

Now, take whichever of these suppositions you please. It is impossible to make personal identity consist in anything but consciousness, or reach any further than that does.

For by the first of them, it must be allowed possible that a man born of different women, and at distant times, may be the same man. Whoever admits this way of speaking must allow it possible for the same man to be two distinct persons. They would be as distinct as any two people who have lived in different ages without knowledge of one another's thoughts.

By the second and third, Socrates in this life and after it cannot be the same man in any way except by the same consciousness. So by making human identity consist in the same thing in which we place personal identity, there will be no difficulty in allowing the same man to be the same person. But then those who place human identity in consciousness only, and not in something else, must consider how they will make the infant Socrates the same man as Socrates after the resurrection. Some people think one thing makes a man, and consequently the same individual man, and others another, and perhaps few

agree on it. But whatever it is, we can place personal identity in nothing but consciousness (which alone makes what we call self) without involving ourselves in great absurdities.

2.27.22 But is not a man the same person drunk and sober? Otherwise why is he punished for a deed he commits while drunk, even though he is never afterwards conscious of it? He is just as much the same person as a man who walks and does other things in his sleep is the same person, and is answerable for any harm he does in it. Human laws punish both, with a justice suited to their way of knowing, because in these cases they cannot tell for certain what is real and what is faked. So ignorance in drunkenness or sleep is not admitted as a plea. For punishment is attached to personality, and personality to consciousness, and the drunkard perhaps is not conscious of what he did. Even so, human courts justly punish him, because the deed is proved against him, but lack of consciousness cannot be proved for him. But on the great day, when the secrets of all hearts will be laid open, it may be reasonable to think that no one will be made to answer for what he knows nothing of. Instead he will receive his sentence as his conscience accuses or excuses him.

2.27.23 *Consciousness alone makes self.*—Nothing but consciousness can unite existences remote in time into the same person; identity of substance will not do it. For whatever substance there is, however it is constituted, without consciousness there is no person. Otherwise a carcass could be a person, just as well as any sort of substance could be one without consciousness.

Suppose two distinct consciousnesses that cannot communicate with each other were to act the same body, one constantly by day, the other by night. And suppose, on the other hand, that the same consciousness were to act two distinct bodies at intervals. I ask, in the first case, whether the day-man and the night-man would not be two persons as distinct as Socrates and Plato? And in the second case, whether there would not be one person in two distinct bodies, just as one man is the same in two different sets of clothes? Nor does it matter at all to say that, in the cases just mentioned, this same consciousness and this distinct con-

sciousness are owing to the same and to distinct immaterial substances, which bring it with them into those bodies. Whether that is true or not, it does not change the case. For it is evident that personal identity would equally be determined by the consciousness, whether that consciousness were attached to some individual immaterial substance or not. For grant that the thinking substance in man must necessarily be supposed immaterial. It is still evident that this immaterial thinking thing may sometimes lose its past consciousness and have it restored again. This appears in the way men often forget their past actions, and the mind many times recovers the memory of a past consciousness it had lost for twenty years at a stretch. Make these intervals of memory and forgetfulness take turns regularly by day and night, and you have two persons with the same immaterial spirit. That is just as in the former example, where you had two persons with the same body. So self is not determined by identity or diversity of substance, which it cannot be sure of, but only by identity of consciousness.

2.27.24 Indeed, it may conceive that the substance it is now made up of existed before, united in the same conscious being. But take away consciousness, and that substance is no more itself, and no more a part of it, than any other substance is. This is evident in the example we have already given of a limb cut off. Since we no longer have any consciousness of its heat or cold or other affections, it is no more part of a man's self than any other matter in the universe. It will be the same with any immaterial substance that lacks the consciousness by which I am myself to myself. There may be some part of its existence that I cannot, on recollection, join with the present consciousness by which I am now myself. In that part of its existence it is no more myself than any other immaterial being is. For suppose some substance has thought or done something that I cannot recollect, and by my consciousness make my own thought and action. That thought or deed will no more belong to me, even if a part of me thought or did it, than if it had been thought or done by any other immaterial being existing anywhere.

2.27.25 I agree that the more probable opinion is that this consciousness is attached to one individual immaterial substance, and is an affection of it.

But let men settle that as they please, according to their various hypotheses. Every intelligent being capable of happiness or misery must grant this much. There is something that is himself, which he is concerned for and wants to be happy. This self has existed in a continued duration of more than one instant, and therefore it may possibly exist, as it has done, for months and years to come, with no fixed limits to be set to its duration. And it may be the same self, by the same consciousness carried on into the future. And so, by his consciousness, he finds himself to be the same self that did this or that action some years ago, by which he comes to be happy or miserable now. In this whole account of self, it is not the same numerical substance that is considered as making the same self, but the same continued consciousness. Several substances may have been united to it and then separated from it again. While they continued in a vital union with that in which this consciousness then resided, they made a part of that same self. Thus any part of our bodies that is vitally united to what is conscious in us makes a part of ourselves. But suppose it is separated from the vital union by which that consciousness is communicated. Then what a moment ago was part of ourselves is now no more so than a part of another man's self is part of me. And it is not impossible that in a short time it may become a real part of another person. So we have the same numerical substance becoming a part of two different persons, and the same person preserved through a change of various substances. Suppose some spirit were wholly stripped of all its memory or consciousness of past actions, as we find our minds always are of a great part of ours, and sometimes of all of them. Then the union or separation of such a spiritual substance would make no more difference to personal identity than that of any particle of matter does. Any substance vitally united to the present thinking being is a part of that very same self which now exists. Anything united to it by a con-

sciousness of former actions also makes a part of the same self, which is the same both then and now.

2.27.26 *Person, a forensic term.*—Person, as I take it, is the name for this self. Wherever a man finds what he calls himself, there, I think, another may say is the same person. It is a forensic term, assigning actions and their merit. And so it belongs only to intelligent agents capable of a law, and of happiness and misery.[24] This personality extends beyond present existence to what is past only by consciousness. By consciousness it becomes concerned and accountable, and owns and imputes past actions to itself, on just the same ground and for the same reason as it does present ones. All this is founded in a concern for happiness, the unavoidable companion of consciousness: whatever is conscious of pleasure and pain desires that the self that is conscious should be happy. Therefore it can be no more concerned in past actions it cannot reconcile with that present self, or appropriate to it, by consciousness than if they had never been done. And to receive pleasure or pain—that is, reward or punishment—on account of any such action is the same as being made happy or miserable in its first existence, without any demerit at all. For suppose a man were punished now for what he had done in another life, of which he could not be made to have any consciousness at all. What difference is there between that punishment and being created miserable? And so, in line with this, the apostle tells us that on the great day, when everyone will "receive according to his doings, the secrets of all hearts shall be laid open." The sentence will be justified by the consciousness all persons will have that they themselves are the same who committed those actions and deserve that punishment for them. That holds in whatever body they appear, and whatever substances that consciousness adheres to.[25]

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24 "Forensic" here means belonging to law courts and legal judgment: the concept of a person is used to assign responsibility.

25 The apostle Paul; Locke combines phrases from 2 Corinthians 5:10 and 1 Corinthians 4:5 (compare Romans 2:16).

2.27.27 I am quite ready to think that in treating this subject I have made some suppositions that will look strange to some readers, and perhaps they really are strange. Still, I think they are pardonable, given how ignorant we are of the nature of the thinking thing in us, which we regard as ourselves. Suppose we knew what it was, or how it was tied to a certain system of fleeting animal spirits. Suppose we knew whether it could or could not perform its operations of thinking and memory outside a body organized as ours is. And suppose we knew whether it has pleased God that no such spirit shall ever be united to more than one such body, on the right constitution of whose organs its memory would depend. Then we might see the absurdity of some of the suppositions I have made. But at present, being in the dark about these matters, we ordinarily take the soul of a man for an immaterial substance, independent of matter and equally indifferent to all of it. On that view, the nature of things makes it no absurdity at all to suppose that the same soul may be united to different bodies at different times, and with them make up one man for that time. We already suppose that part of a sheep's body yesterday might be part of a man's body tomorrow. In that union it would make a vital part of Meliboeus himself, as it did of his ram.[26]

2.27.28 *The difficulty from ill use of names.*—To conclude: whatever substance begins to exist must necessarily be the same during its existence. Whatever compositions of substances begin to exist, the concrete thing must be the same during the union of those substances. Whatever mode begins to exist is the same during its existence. And so, if the composition is of distinct substances and different modes, the same rule holds. From this it will appear that the difficulty or obscurity there has been about this matter arises from names badly used rather than from any obscurity in the things themselves. For whatever makes up the specific idea to which the name is applied, the distinction of anything into the same and different will be easily

26 Meliboeus is a shepherd in Virgil's *Eclogues*.

conceived, as long as that idea is steadily kept to. No doubt can then arise about it.

2.27.29 *Continued existence makes identity.*—For suppose a rational spirit is the idea of a man. Then it is easy to know what the same man is: namely, the same spirit, whether separate or in a body, will be the same man. Suppose instead that a rational spirit vitally united to a body with a certain structure of parts makes a man. Then that rational spirit, with that vital structure of parts, may be continued in a fleeting, successive body. As long as it remains, it will be the same man. But for someone else the idea of a man may be only the vital union of parts in a certain shape. Then as long as that vital union and shape remain, it will be the same man, even in a concrete thing that is the same only by a continued succession of fleeting particles. For whatever the composition of the complex idea, whenever existence makes it one particular thing under any denomination, the same existence continued keeps it the same individual under the same denomination.

OTHER RELATIONS

Locke surveys proportional, natural, instituted and moral relations, and the three laws by which actions are judged.

2.28.1 *Proportional.*—Besides the occasions already mentioned for comparing or referring things to one another, namely time, place, and causality, there are, as I have said, infinitely many others. I shall mention some of them.

First, the first I shall name is some one simple idea which is capable of parts or degrees. It gives occasion to compare the subjects it is in with one another in respect of that simple idea, for example, whiter, sweeter, bigger, equal, more, and so on. These relations depend on the equality and excess of the same simple idea in several subjects, and may be called proportional, if one likes. And it is so evident that they concern only simple ideas received from sensation or reflection that nothing need be said to prove it.

2.28.2 *Natural.*—Secondly, another occasion of comparing things together, or of considering one thing so as to include some other thing in that consideration, is the circumstance of their origin or beginning. Since this cannot afterwards be altered, it makes the relations that depend on it as lasting as the subjects to which they belong. Examples are father and son, brothers, first cousins, and so on, who have their relations through one shared blood, which they share in various degrees. Another example is countrymen, that is, those who were born in the same country or tract of land. These I call natural relations. In them we may observe that mankind has fitted its notions and words to the uses of common life, and not to the truth and extent of things. For it is certain that in reality the relation between begetter and begotten is the same in the various races of other animals as in men. Yet it is seldom said that this bull is the grandfather of such-and-such a calf, or that two pigeons are first cousins. It is very convenient that among mankind these relations should be noted and marked out by distinct names. There is occasion, both in laws and in other dealings with one another, to mention and take notice of men under these relations. From them also arise the obligations of various duties among men. In animals, by contrast, men have little or no reason to pay attention to these relations, so they have not thought fit to give them distinct and special names. This, incidentally, may throw some light on the different state and growth of languages. Languages are suited only to the convenience of communication. So they are proportioned to the notions men have and the exchange of thoughts familiar among them. They are not proportioned to the reality or extent of things, nor to the various respects that might be found among things, nor to the different abstract considerations that might be framed about them. Where people had no philosophical notions, they had no terms to express them. And it is no wonder that men should have framed no names for things they found no occasion to talk about. From this it is easy to imagine why in some countries they may not have so much as a name for a horse. In others they are more careful of their horses'

pedigrees than of their own, and there they may have names not only for particular horses but also for their various relations of kinship to one another.

2.28.3 *Instituted.*—Thirdly, sometimes the basis for considering things in reference to one another is some act by which someone comes to have a moral right, power, or obligation to do something. Thus a general is one who has power to command an army, and an army under a general is a collection of armed men obliged to obey one man. A citizen, or a burgher, is one who has a right to certain privileges in this or that place. All relations of this sort depend on men's wills or on agreement in society, and I call them instituted, or voluntary. They may be distinguished from the natural in that most, if not all, of them can in some way be altered and separated from the persons to whom they have at times belonged, even though neither of the substances so related is destroyed. Now, these are all reciprocal like the rest, and contain a reference of two things to each other. Still, one of the two things often lacks a relative name expressing that reference, so men usually take no notice of it, and the relation is commonly overlooked. For example, a patron and a client are readily accepted as relations, but a constable or a dictator are not so readily considered such at first hearing. That is because there is no special name for those under the command of a dictator or a constable that expresses a relation to either of them. Yet it is certain that each of them has a certain power over some others. To that extent each is related to them, just as a patron is to his client, or a general to his army.

MORAL RELATIONS AND THREE LAWS

Locke distinguishes the divine law, the civil law and the law of opinion, the measures of sin, crime and vice.

2.28.4 *Moral.*—Fourthly, there is another sort of relation. It is the conformity or disagreement that men's voluntary actions have with a rule to which they are referred and by which they are judged. This, I think, may be called moral relation, since it is

what gives our moral actions their names. It well deserves to be examined, since there is no part of knowledge in which we should be more careful to get determinate ideas and to avoid obscurity and confusion as far as possible. Human actions, when they are framed with their various ends, objects, manners, and circumstances into distinct complex ideas, are, as has been shown, so many mixed modes. A large part of these have names attached to them. Thus, suppose gratitude is a readiness to acknowledge and return kindness received, and polygamy is having more than one wife at once. When we frame these notions in our minds this way, we have so many determinate ideas of mixed modes. But this is not all that concerns our actions. It is not enough to have determinate ideas of them and to know what names belong to such and such combinations of ideas. We have a further and greater concern, and that is to know whether such actions, so made up, are morally good or bad.

2.28.5 *Moral good and evil.*—Good and evil, as has been shown (Book II, Chapter 20, Section 2, and Chapter 21, Section 42), are nothing but pleasure or pain, or what occasions or procures pleasure or pain for us. Moral good and evil, then, is only the conformity or disagreement of our voluntary actions with some law, by which good or evil is brought upon us by the will and power of the lawmaker. By the lawmaker's decree, this good and evil, pleasure or pain, attends our observance or breach of the law, and it is what we call reward and punishment.

2.28.6 *Moral rules.*—Men generally refer their actions to moral rules or laws, and judge by them whether those actions are right or depraved. Of these rules there seem to me to be three sorts, with their three different enforcements, or rewards and punishments. It would be utterly pointless to suppose a rule set to the free actions of man without attaching to it some enforcement of good and evil to determine his will. So wherever we suppose a law, we must also suppose some reward or punishment attached to that law. It would be pointless for one intelligent being to set a rule for the actions of another unless he had it in his power to

reward compliance with his rule, and punish deviation from it, by some good and evil. That good and evil must not be the natural product and consequence of the action itself. For that, being a natural advantage or disadvantage, would operate of itself without a law. This, if I am not mistaken, is the true nature of all law, properly so called.

2.28.7 *Laws.*—The laws to which men generally refer their actions, to judge whether they are right or wrong, seem to me to be these three: 1. The divine law. 2. The civil law. 3. The law of opinion or reputation, if I may call it that. By the relation their actions bear to the first of these, men judge whether they are sins or duties; by the second, whether they are criminal or innocent; and by the third, whether they are virtues or vices.

2.28.8 *Divine law, the measure of sin and duty.*—First, the divine law. By this I mean the law that God has set to the actions of men, whether made known to them by the light of nature or by the voice of revelation. I think there is nobody so brutish as to deny that God has given a rule by which men should govern themselves. He has a right to do it, since we are his creatures. He has the goodness and wisdom to direct our actions to what is best. And he has the power to enforce it by rewards and punishments of infinite weight and duration in another life, for nobody can take us out of his hands. This is the only true touchstone of moral rectitude. It is by comparing their actions to this law that men judge of the most considerable moral good or evil in them. That is, they judge whether, as duties or sins, those actions are likely to bring them happiness or misery from the hand of the Almighty.

2.28.9 *Civil law, the measure of crimes and innocence.*—Secondly, the civil law, the rule set by the commonwealth to the actions of those who belong to it, is another rule to which men refer their actions, to judge whether they are criminal or not. Nobody overlooks this law, since the rewards and punishments that enforce it are ready at hand and suited to the power that makes it. That power is the force of the commonwealth. It is engaged to protect the lives, liberties, and possessions of those who live according

to its laws. It also has power to take away life, liberty, or goods from anyone who disobeys, and that is the punishment for offenses committed against this law.

2.28.10 *Philosophical law, the measure of virtue and vice.*—Thirdly, the law of opinion or reputation. Virtue and vice are names that are claimed and supposed everywhere to stand for actions right and wrong in their own nature. As far as they really are applied that way, they coincide with the divine law mentioned above. But whatever is claimed, this much is plain about how these names are applied in particular cases throughout the various nations and societies of men in the world. Virtue and vice are constantly attributed only to such actions as are in good or bad repute in each country and society. Nor should it be thought strange that men everywhere give the name of virtue to those actions which they judge praiseworthy, and call vice what they consider blameworthy. Otherwise they would be condemning themselves, if they thought anything right which they did not commend, or anything wrong which they let pass without blame. Thus the measure of what is everywhere called and regarded as virtue and vice is approval or dislike, praise or blame. This establishes itself by a secret and tacit consent in the various societies, tribes, and clubs of men in the world. By this, various actions come to be in credit or disgrace among them, according to the judgment, maxims, or fashion of that place. For in uniting into political societies, men have handed over to the public the disposal of all their force, so that they cannot use it against any fellow citizen beyond what the law of the country directs. Still, they keep the power of thinking well or ill of the actions of those they live among and associate with, and of approving or disapproving of them. And by this approval and dislike they establish among themselves what they will call virtue and vice.

2.28.11 *The measure that men commonly apply to determine what they call virtue and vice.*—That this is the common measure of virtue and vice will be clear to anyone who considers the following. What passes for vice in one country is counted a virtue, or

at least not a vice, in another. Yet everywhere virtue and praise, vice and blame, go together. Virtue is everywhere what is thought praiseworthy, and nothing is called virtue except what has the approval of public esteem. Virtue and praise are so united that they are often called by the same name. *Sunt sua præmia laudi*, says Virgil. And so Cicero says, *Nihil habet natura præstantius, quam honestatem, quam laudem, quam dignitatem, quam decus*, and he tells us these are all names for the same thing (*Tusculan Disputations*, Book II).[27] This is the language of the pagan philosophers, who understood well what their notions of virtue and vice consisted in. Men of different sorts differ in temperament, education, fashion, maxims, and interests. Perhaps because of this, what was thought praiseworthy in one place did not escape censure in another, and so virtues and vices shifted in different societies. Still, in the main, they mostly stayed the same everywhere. For nothing can be more natural than to encourage with esteem and reputation whatever everyone finds to his advantage, and to blame and frown on the contrary. So it is no wonder that esteem and discredit, virtue and vice, should to a great extent everywhere correspond with the unchangeable rule of right and wrong which the law of God has established. Nothing so directly and visibly secures and advances the general good of mankind in this world as obedience to the laws he has set them, and nothing breeds such harm and confusion as neglect of them. Men are constantly true to their own interest. So unless they renounced all sense and reason and that interest, they could not generally be mistaken by putting their praise and blame on the side that did not really deserve it. Indeed, even men whose practice was otherwise did not fail to give their approval rightly. Few are so depraved as not to condemn, at least in others, the faults they themselves were guilty of. By this means, even amid the corruption of morals, the true boundaries of the law of nature, which

27 Virgil, *Aeneid* 1.461: "Praise has its own rewards." Cicero, *Tusculan Disputations* 2.46: "Nature has nothing more excellent than honor, than praise, than dignity, than distinction."

ought to be the rule of virtue and vice, were fairly well preserved. Even the exhortations of inspired teachers have not been afraid to appeal to common repute: "Whatsoever is lovely, whatsoever is of good report, if there be any virtue, if there be any praise," etc. (Philippians 4:8).

2.28.12 *Its enforcements, commendation, and discredit.*—Someone may imagine that I have forgotten my own notion of a law. I make the law by which men judge of virtue and vice nothing but the consent of private men, who do not have enough authority to make a law. In particular, they lack what is so necessary and essential to a law: a power to enforce it. To him I think I may say this. Anyone who imagines that praise and disgrace are not strong motives for men seems to know little of the nature or history of mankind. They are strong motives for men to adapt themselves to the opinions and rules of those they associate with. He will find that the greater part of mankind govern themselves chiefly, if not solely, by this law of fashion. As long as they do what keeps them in good repute with their company, they pay little regard to the laws of God or of the magistrate. Some men, perhaps most, seldom seriously reflect on the penalties that attend the breach of God's laws. Of those who do, many entertain thoughts of later reconciliation while they break that law, and of making their peace for such breaches. As for the punishments due under the laws of the commonwealth, they often flatter themselves with hopes of escaping them. But no man escapes the punishment of censure and dislike who offends against the fashion and opinion of the company he keeps and wants to recommend himself to. Nor is there one in ten thousand who is stiff and insensible enough to hold up under the constant dislike and condemnation of his own club. He must be of a strange and unusual constitution who can content himself to live in constant disgrace and disrepute with his own particular society. Many men have sought solitude and been reconciled to it. But nobody who has the least thought or feeling of a man in him can live in society under the constant dislike and bad opinion of his intimates and those he associates with. This is a bur-

den too heavy for human endurance. He must be made of irreconcilable contradictions who can take pleasure in company and yet be insensible to contempt and disgrace from his companions.

2.28.13 *These three laws, the rules of moral good and evil.*—These three, then, are the laws to which men variously compare their actions: first, the law of God; secondly, the law of political societies; thirdly, the law of fashion, or private censure. When men want to judge the moral rectitude of their actions and call them good or bad, they take their measures by the actions' conformity to one of these laws.

2.28.14 *Morality is the relation of actions to these rules.*—We bring our voluntary actions to a rule, as to a touchstone. We examine them by it, test their goodness, and name them accordingly, and the name is, as it were, the mark of the value we set on them. We may take that rule from the fashion of the country or from the will of a lawmaker. Either way, the mind is easily able to observe the relation any action has to it and to judge whether the action agrees or disagrees with the rule. And so it has a notion of moral goodness or evil, which is either the conformity or the nonconformity of an action to that rule. This is therefore often called moral rectitude. This rule is nothing but a collection of several simple ideas. So conformity to it is simply ordering the action so that the simple ideas belonging to it correspond to those the law requires. And thus we see how moral beings and notions are founded on, and end in, the simple ideas we have received from sensation or reflection. For example, let us consider the complex idea we signify by the word murder. When we have taken it apart and examined all the particulars, we shall find that they amount to a collection of simple ideas derived from reflection or sensation, namely: First, from reflection on the operations of our own minds, we have the ideas of willing, considering, planning beforehand, and malice, or wishing ill to another. We also have the ideas of life, or perception, and self-motion. Secondly, from sensation we have the collection of those simple sensible ideas which are found in a man, and of some action by which we

put an end to perception and motion in a man. All these simple ideas are included in the word murder. I may find this collection of simple ideas to agree or disagree with the esteem of the country I was brought up in, and to be held by most people there worthy of praise or blame. Then I call the action virtuous or vicious. If I take the will of a supreme invisible Lawmaker as my rule, I suppose the action commanded or forbidden by God, and accordingly I call it good or evil, sin or duty. And if I compare it to the civil law, the rule made by the legislative power of the country, I call it lawful or unlawful, a crime or no crime. So wherever we take the rule of moral actions from, and by whatever standard we frame the ideas of virtues or vices in our minds, those ideas consist only of collections of simple ideas, which we originally received from sense or reflection. Their rightness or wrongness consists in their agreement or disagreement with the patterns prescribed by some law.

2.28.15 To conceive rightly of moral actions, we must consider them in this twofold way. First, we must consider them as they are in themselves, each made up of such a collection of simple ideas. Thus drunkenness or lying signifies such and such a collection of simple ideas, which I call mixed modes. In this sense they are just as much positive, absolute ideas as the drinking of a horse or the speaking of a parrot. Secondly, our actions are considered as good, bad, or indifferent. In this respect they are relative, since it is their conformity to, or disagreement with, some rule that makes them regular or irregular, good or bad. So insofar as they are compared with a rule and named accordingly, they come under relation. Take challenging and fighting a man. As a certain positive mode, a particular sort of action distinguished from all others by particular ideas, it is called dueling. Considered in relation to the law of God, it will deserve the name sin. In relation to the law of fashion, in some countries, it will deserve the names valor and virtue. And in relation to the municipal laws of some governments, it will deserve the name of a capital crime. In this case the positive mode has one name, and another name as it stands in relation to the law. Here the

distinction can be observed as easily as it is in substances, where one name, for example, man, is used to signify the thing, and another, for example, father, to signify the relation.

2.28.16 *The denominations of actions often mislead us.*—But very often the positive idea of the action and its moral relation are included together under one name. The same word is used to express both the mode or action and its moral rightness or wrongness. Because of this, the relation itself is less noticed, and often no distinction is made between the positive idea of the action and the reference it has to a rule. Some people yield too easily to the impressions of sounds and are quick to take names for things. Through this confusion of two distinct considerations under one term, they are often misled in their judgment of actions. Thus taking from another what is his, without his knowledge or consent, is properly called stealing. But that name is commonly understood to signify also the moral depravity of the action, and to denote that it is contrary to the law. So men are apt to condemn whatever they hear called stealing as a bad action, disagreeing with the rule of right. Now consider secretly taking a sword away from a man who is mentally ill, to keep him from doing harm. This is properly called stealing, as the name of such a mixed mode. Yet compared to the law of God, and considered in relation to that supreme rule, it is no sin or transgression, even though the name stealing ordinarily carries that suggestion with it.

2.28.17 *Relations innumerable.*—So much, then, for the relation of human actions to a law, which I therefore call moral relation.

It would take a volume to go through all sorts of relations, so it is not to be expected that I should mention them all here. It is enough for our present purpose to show by these what ideas we have of this comprehensive consideration called relation. Relation is so various, and the occasions for it are so many (as many as there can be for comparing things with one another), that it is not very easy to reduce it to rules or arrange it under proper headings. The relations I have mentioned are, I think, some of the most considerable. They may serve to let us see where we

get our ideas of relations from and what they are founded on. But before I leave this topic, allow me to observe, from what has been said,

2.28.18 *All relations terminate in simple ideas.*—First, it is evident that all relation terminates in, and is ultimately founded on, the simple ideas we have gotten from sensation or reflection. So everything we have in our own thoughts (if we think of anything, or mean anything), and everything we want to convey to others, when we use words standing for relations, is nothing but some simple ideas, or collections of simple ideas, compared with one another. Nothing could be more obvious than this in the sort of relation called proportional. When a man says honey is sweeter than wax, it is plain that his thoughts in this relation terminate in this simple idea, sweetness. The same is true of all the rest, though where they are compounded or decompounded, the simple ideas they are made up of are perhaps seldom noticed. For example, when the word father is mentioned, what is meant is, first, that particular species, or collective idea, signified by the word man. Second, those sensible simple ideas signified by the word generation. And third, its effects, and all the simple ideas signified by the word child. In the same way, the word friend, taken for a man who loves another and is ready to do him good, is made up of all the following ideas. First, all the simple ideas included in the word man, or intelligent being. Second, the idea of love. Third, the idea of readiness or disposition. Fourth, the idea of action, which is any kind of thought or motion. Fifth, the idea of good, which signifies anything that may advance his happiness. If examined, this finally terminates in particular simple ideas, any one of which the word good in general signifies. But if it is removed entirely from all simple ideas, it signifies nothing at all. So too all moral words terminate at last, though perhaps more remotely, in a collection of simple ideas. The immediate meaning of relative words is very often other relations supposed to be known, and these, if traced from one to another, still end in simple ideas.

2.28.19 *We ordinarily have as clear (or clearer) a notion of the relation as of its foundation.*—Second, in relations we have for the most part, if not always, as clear a notion of the relation as we have of the simple ideas it is founded on. For agreement or disagreement, on which relation depends, are things of which we commonly have ideas as clear as of anything else whatever. It is only a matter of distinguishing simple ideas, or their degrees, from one another, and without that we could have no distinct knowledge at all. For if I have a clear idea of sweetness, light, or extension, I also have a clear idea of equal, or more, or less of each of them. If I know what it is for one man to be born of a woman, namely Sempronia, I know what it is for another man to be born of the same woman, Sempronia. So I have as clear a notion of brothers as of births, and perhaps a clearer one. Suppose I believed that Sempronia dug Titus out of the parsley bed (as people used to tell children), and so became his mother, and that afterward she dug Caius out of the parsley bed in the same way. I would have as clear a notion of the relation of brothers between them as if I had all the skill of a midwife. For what I grounded the relation on was the notion that the same woman contributed equally, as mother, to their births (even though I was ignorant or mistaken about how), and that they agreed in that circumstance of birth, whatever it might be. So comparing them in their descent from the same person, without knowing the particular circumstances of that descent, is enough to found my notion of whether or not they have the relation of brothers. But although the ideas of particular relations can be as clear and distinct as those of mixed modes in the minds of people who will consider them properly, and more determinate than those of substances, the names belonging to relation are often as doubtful and uncertain in their meaning as those of substances or mixed modes, and much more so than those of simple ideas. The reason is that relative words are the marks of this comparison, which is made only by men's thoughts and is an idea only in men's minds. So men frequently apply them to different comparisons of things, according to their own imaginations, and

these do not always correspond with the imaginations of others using the same name.

2.28.20 *The notion of the relation is the same, whether the rule and action compared are true or false.*—Third, in what I call moral relations I have a true notion of relation by comparing the action with the rule, whether the rule is true or false. If I measure something with a yardstick, I know whether the thing I measure is longer or shorter than that supposed yard, even though the yardstick I measure by may not be exactly the standard. That is really a different inquiry. For even if the rule is wrong, and I am mistaken about it, the agreement or disagreement I can observe in what I compare with it makes me perceive the relation. If I measure by a wrong rule, I will be led to misjudge the action's moral rightness, because I have tested it by something that is not the true rule. Yet I am not mistaken about the relation that action bears to the rule I compare it with, which is agreement or disagreement.

CLEAR AND DISTINCT IDEAS

Locke explains what makes ideas clear or obscure, distinct or confused, and how confusion relates to names.

2.29.1 *Ideas, some clear and distinct, others obscure and confused.*—I have shown the origin of our ideas and surveyed their various sorts. I have considered the difference between the simple and the complex, and observed how the complex ones are divided into those of modes, substances, and relations. All this, I think, has to be done by anyone who wants to acquaint himself thoroughly with the progress of the mind in its apprehension and knowledge of things. It may now be thought that I have dwelt long enough on the examination of ideas. Nevertheless I must ask leave to offer a few more considerations about them. The first is that some are clear and others obscure, some distinct and others confused.

2.29.2 *Clear and obscure explained by sight.*—Since the perception of the mind is most aptly explained by words relating to sight,

we will best understand what is meant by clear and obscure in our ideas by reflecting on what we call clear and obscure in the objects of sight. Light is what reveals visible objects to us, so we call obscure whatever is not placed in enough light to reveal to us in detail the shape and colors that can be observed in it, and that would be discernible in a better light. In the same way, our simple ideas are clear when they are such as the objects they were taken from did or could present them in a well-ordered sensation or perception. As long as the memory retains them in this way, and can produce them to the mind whenever it needs to consider them, they are clear ideas. To the extent that they either lack anything of their original exactness, or have lost any of their first freshness and are, so to speak, faded or tarnished by time, to that extent they are obscure. Complex ideas are made up of simple ones, and so they are clear when the ideas that go into their composition are clear, and when the number and order of the simple ideas that are the ingredients of the complex one are determinate and certain.

2.29.3 *Causes of obscurity.*—The causes of obscurity in simple ideas seem to be either dull organs, or very slight and fleeting impressions made by the objects, or else a weakness of memory that cannot retain them as they were received. To return again to visible objects, to help us grasp this matter: suppose the organs or faculties of perception are like wax hardened too much by cold, and will not take the impression of the seal from the usual pressure that normally imprints it. Or suppose they are like wax too soft, which will not hold the impression well even when it has been well imprinted. Or suppose the wax is of the right consistency, but the seal is not applied with enough force to make a clear impression. In any of these cases the print left by the seal will be obscure. This, I suppose, needs no application to make it plainer.

2.29.4 *Distinct and confused, what.*—A clear idea is one of which the mind has as full and evident a perception as it receives from an outward object acting properly on a well-disposed organ. In the same way, a distinct idea is one in which the mind perceives

a difference from all others, and a confused idea is one that is not sufficiently distinguishable from another from which it ought to be different.

2.29.5 *Objection.*—Someone may say: if no idea is confused except one that is not sufficiently distinguishable from another from which it should be different, it will be hard to find a confused idea anywhere. For whatever an idea may be, it can be nothing other than what the mind perceives it to be. And that very perception sufficiently distinguishes it from all other ideas, which cannot be other, that is, different, without being perceived to be so. So no idea can be indistinguishable from another from which it ought to be different, unless you want it to be different from itself, for it is evidently different from all others.

2.29.6 *Confusion of ideas is in reference to their names.*—To remove this difficulty, and to help us understand correctly what makes up the confusion that ideas can at any time be charged with, we must consider that things ranked under distinct names are supposed to be different enough to be distinguished, so that each sort can be marked by its own name and discussed separately whenever needed. And nothing is more evident than that most different names are supposed to stand for different things. Now every idea a man has is visibly what it is, and distinct from all ideas other than itself. What makes it confused is when it is such that it could just as well be called by another name as by the one it is expressed by. The difference that keeps the things to be ranked under those two different names distinct, and makes some of them belong to one of those names rather than the other, has been left out. And so the distinction those different names were meant to preserve is completely lost.

2.29.7 *Defects which cause confusion.*—The defects that usually cause this confusion are, I think, chiefly the following.

First, complex ideas made up of too few simple ones.—First, when a complex idea (for it is complex ideas that are most liable to confusion) is made up of too small a number of simple ideas, and only ones that are common to other things, so that the dif-

ferences that entitle it to a different name are left out. Thus someone whose idea is made up only of the simple ideas of a beast with spots has only a confused idea of a leopard, since it is not thereby sufficiently distinguished from a lynx and several other sorts of spotted beasts. So such an idea, though it has its own name, leopard, cannot be distinguished from those designated by the names lynx or panther, and could just as well come under the name lynx as leopard. How much the custom of defining words by general terms contributes to making the ideas we want to express by them confused and undetermined, I leave others to consider. This much is evident: confused ideas are the kind that make the use of words uncertain and take away the benefit of distinct names. When the ideas for which we use different terms do not have a difference corresponding to their distinct names, and so cannot be distinguished by them, it is then that they are truly confused.

2.29.8 *Second, or its simple ones jumbled together in disorder.*— Second, another fault that makes our ideas confused is when the particulars that make up an idea are numerous enough, but are so jumbled together that it is not easy to tell whether it belongs to the name it is given more than to any other. Nothing is better suited to make us conceive this confusion than a kind of picture usually shown as a surprising piece of art, in which the colors, as laid by the brush on the panel itself, mark out very odd and unusual shapes and have no discernible order in their arrangement. A drawing like this, made up of parts in which no symmetry or order appears, is in itself no more a confused thing than the picture of a cloudy sky. There is just as little order of colors or shapes to be found there, yet nobody thinks it a confused picture. What is it, then, that makes the first be thought confused, since the lack of symmetry does not? Plainly it does not, for another drawing made simply in imitation of this one could not be called confused. I answer: what makes it be thought confused is applying it to some name to which it does not discernibly belong any more than to some other. For example, when it is said to be the picture of a man, or of Caesar,

anyone may reasonably count it confused, because in that state it cannot be seen to belong to the name man or Caesar any more than to the name baboon or Pompey, which are supposed to stand for ideas different from those signified by man or Caesar. But when a cylindrical mirror, placed correctly, has brought those irregular lines on the panel into their proper order and proportion, the confusion ends. The eye immediately sees that it is a man, or Caesar, that is, that it belongs to those names, and that it is sufficiently distinguishable from a baboon or Pompey—[28] that is, from the ideas signified by those names. It is just the same with our ideas, which are, so to speak, the pictures of things. None of these mental drawings, however their parts are put together, can be called confused (for they are plainly discernible as they are) until it is ranked under some ordinary name to which it cannot be seen to belong any more than it does to some other name with an acknowledged different meaning.

2.29.9 *Third, or are changeable and undetermined.*—Third, a defect that frequently gets our ideas called confused is when any of them is uncertain and undetermined. Thus we may observe men who do not refrain from using the ordinary words of their language until they have learned their precise meaning, and who change the idea they make this or that term stand for almost every time they use it. Someone who does this, out of uncertainty about what he should leave out of or put into his idea of church or idolatry every time he thinks of either, and who does not hold steady to any one precise combination of ideas that makes it up, is said to have a confused idea of idolatry, or of the church. Yet this is still for the same reason as before, namely, that a changeable idea (if we allow it to be one idea) cannot belong to one name rather than another, and so loses the distinction that distinct names are meant for.

2.29.10 *Confusion, without reference to names, hardly conceivable.*—From what has been said, we can see how much names are

28 Locke describes an anamorphic picture, a popular curiosity of the period: a deliberately distorted image that appears correctly only when reflected in a cylindrical mirror.

responsible for our calling ideas distinct or confused. Names are supposed to be steady signs of things, and by their difference to stand for and keep distinct things that are different in themselves; and the mind makes a secret and unnoticed reference of its ideas to such names. This will perhaps be more fully understood once what I say about words in the third book has been read and considered. But without noticing this reference of ideas to distinct names, as the signs of distinct things, it will be hard to say what a confused idea is. So when a man uses a name to designate a sort of things, or any one particular thing, as distinct from all others, the complex idea he attaches to that name is the more distinct, the more particular the ideas it is made up of are, and the greater and more determinate their number and order. For the more of these it has, the more perceivable differences it has, by which it is kept separate and distinct from all ideas belonging to other names, even those that come closest to it; and in this way all confusion with them is avoided.

2.29.11 *Confusion always concerns two ideas.*—Confusion, which makes it difficult to separate two things that should be separated, always concerns two ideas, and most of all those that come closest to each other. So whenever we suspect an idea of being confused, we must examine what other idea it is in danger of being confused with, or cannot easily be separated from. That will always turn out to be an idea belonging to another name, and so should be a different thing, but from which it is not sufficiently distinct. It is either the same as it, or part of it, or at least can be called by that name as properly as by the one it is ranked under. So it does not keep the difference from that other idea that the different names imply.

2.29.12 *Causes of confusion.*—This, I think, is the confusion proper to ideas, and it always carries with it a secret reference to names. At least, if there is any other confusion of ideas, this is the one that most of all disorders men's thoughts and discourse. For ideas as ranked under names are for the most part the ones men reason about within themselves, and always the ones they communicate about with others. So wherever two different

ideas are supposed to be marked by two different names, but are not as distinguishable as the sounds that stand for them, there is always confusion. And wherever ideas are as distinct as the ideas of the two sounds that mark them, there can be no confusion between them.—The way to prevent it is to collect and unite into one complex idea, as precisely as possible, all the ingredients by which it is differentiated from others, and to apply the same name steadily to them, united in a determinate number and order. But since this neither suits men's ease or vanity, nor serves any purpose except that of naked truth, which is not always what is aimed at, such exactness is more to be wished for than hoped for. And since loosely applying names to undetermined, variable, and almost nonexistent ideas serves both to cover our own ignorance and to perplex and confuse others, which passes for learning and superior knowledge, it is no wonder that most men use it themselves while complaining of it in others. Though I think no small part of the confusion found in men's notions could be avoided by care and ingenuity, I am far from concluding that it is everywhere deliberate. Some ideas are so complex, and made up of so many parts, that the memory does not easily retain exactly the same precise combination of simple ideas under one name. Much less can we always guess what precise complex idea such a name stands for when another man uses it. The first of these leads to confusion in a man's own reasonings and opinions within himself; the second, to frequent confusion in discussing and arguing with others. But since I treat words, their defects and abuses, at greater length in the following book, I will say no more about it here.

2.29.13 *Complex ideas may be distinct in one part and confused in another.*—Since our complex ideas are made up of collections, and so of a variety, of simple ones, they may accordingly be very clear and distinct in one part and very obscure and confused in another. In a man who speaks of a chiliaedron, or a body of a thousand sides, the idea of the shape may be very confused, though that of the number is very distinct. Because he is able to discuss and demonstrate things about the part of his complex

idea that depends on the number one thousand, he is apt to think he has a distinct idea of a chiliaedron. Yet it is plain that he has no precise idea of its shape, such as would let him distinguish it by that from one that has only 999 sides. Failing to notice this causes no small error in men's thoughts, and confusion in their discourse.

2.29.14 *This, if not heeded, causes confusion in our arguments.*—Let anyone who thinks he has a distinct idea of the shape of a chiliaedron, as a test, take another lump of the same uniform matter, namely gold or wax, of equal size, and make it into a shape of 999 sides. I have no doubt he will be able to distinguish these two ideas from each other by the number of sides, and to reason and argue distinctly about them, as long as he confines his thoughts and reasoning to the part of these ideas contained in their numbers: for instance, that the sides of the one could be divided into two equal numbers and those of the other could not, and so on. But when he tries to distinguish them by their shape, he will immediately be at a loss. He will not be able, I think, to form in his mind two ideas distinct from each other by the mere shape of these two pieces of gold, as he could if the same lumps of gold were made one into a cube and the other into a five-sided figure. With such incomplete ideas we are very apt to deceive ourselves and quarrel with others, especially where they have particular and familiar names. For we are satisfied with the part of the idea that we have clearly, and the name familiar to us is applied to the whole, including the part that is imperfect and obscure. So we are apt to use it for that confused part, and to draw deductions from it in the obscure part of its meaning as confidently as we do from the other.

2.29.15 *Instance in eternity.*—Since the name eternity is often on our lips, we are apt to think we have a positive, comprehensive idea of it, which is as much as to say that there is no part of that duration that is not clearly contained in our idea. It is true that someone who thinks so may have a clear idea of duration. He may also have a very clear idea of a very great length of duration. He may also have a clear idea of the comparison of that

great one with a still greater one. But it is not possible for him to include in his idea of any duration, however great, the whole extent at once of a duration that he supposes to have no end. So the part of his idea that lies beyond the limits of the large duration he represents to his own thoughts is very obscure and undetermined. That is why, in disputes and reasonings about eternity, or any other infinity, we are apt to blunder and entangle ourselves in obvious absurdities.

2.29.16 *Divisibility of matter.*—In matter we have no clear ideas of smallness of parts much beyond the smallest that occur to any of our senses. So when we talk about the divisibility of matter to infinity, we have clear ideas of division and divisibility, and also clear ideas of parts made from a whole by division. But we have only very obscure and confused ideas of corpuscles, or minute bodies, to be divided in this way once earlier divisions have reduced them to a smallness far beyond the perception of any of our senses. So all we have clear and distinct ideas of is what division is in general or in the abstract, and the relation of whole and parts. But of the size of the body to be divided infinitely in this way, after certain stages, I think we have no clear or distinct idea at all. For I ask anyone whether, taking the smallest speck of dust he ever saw, he has any distinct idea of the difference (apart from the number, which does not concern extension) between the 100,000th and the 1,000,000th part of it. Or if he thinks he can refine his ideas to that degree without losing sight of them, let him add ten zeros to each of those numbers. It is not unreasonable to suppose such a degree of smallness, since a division carried that far brings it no nearer the end of infinite division than the first division into two halves does. For my part, I must confess that I have no clear, distinct ideas of the different size or extension of those bodies, having only a very obscure idea of either of them. So I think that when we talk about the division of bodies to infinity, our idea of their distinct sizes, which is the subject and foundation of division, becomes confused after a little progress, and almost lost in obscurity. For an idea that is meant to represent only size must be very obscure

and confused if we cannot distinguish it from one ten times as big except by number. So we have clear, distinct ideas, we may say, of ten and one, but no distinct ideas of two such extensions. It is plain from this that when we talk of the infinite divisibility of body, or extension, our distinct and clear ideas are only of numbers. The clear, distinct ideas of extension are completely lost after some progress of division, and of such minute parts we have no distinct ideas at all. It all comes back at last, as all our ideas of the infinite do, to the idea of number that can always be added to, but that never thereby amounts to any distinct idea of actually infinite parts. It is true that we have a clear idea of division whenever we think of it. But that no more gives us a clear idea of infinite parts in matter than being able always to add new numbers to any given numbers we have gives us a clear idea of an infinite number. Endless divisibility no more gives us a clear and distinct idea of actually infinite parts than endless addibility (if I may put it that way) gives us a clear and distinct idea of an actually infinite number. For both consist only in a power of increasing the number further, however great it already is. So of what remains to be added (which is where the infinity consists) we have only an obscure, imperfect, and confused idea. We cannot argue or reason from or about it with any certainty or clearness, any more than we can in arithmetic about a number of which we have no distinct idea such as we have of four or a hundred, but only the relative, obscure idea that it is always bigger than any other. And we have no clearer positive idea of it when we say or conceive that it is bigger than, or more than, 400,000,000, than if we said it is bigger than forty or four. For 400,000,000 bears no nearer a proportion to the end of addition or number than four does. Someone who adds only four to four, and so on, will reach the end of all addition just as soon as someone who adds 400,000,000 to 400,000,000. Likewise with eternity: someone who has an idea of only four years has as positive and complete an idea of eternity as someone who has an idea of 400,000,000 years. For what remains of eternity beyond either of these two numbers of years is as clear to the one as

to the other; that is, neither of them has any clear positive idea of it at all. For someone who adds only four years to four, and so on, will reach eternity just as soon as someone who adds 400,000,000 years, and so on, or, if he likes, doubles the increase as often as he wants. The remaining abyss is still as far beyond the end of all these progressions as it is beyond the length of a day or an hour. For nothing finite bears any proportion to the infinite, and so our ideas, which are all finite, cannot bear any. It is the same with our ideas of extension, both when we increase it by addition and when we diminish it by division, and try to enlarge our thoughts to infinite space. After a few doublings of the largest ideas of extension we are used to having, we lose the clear, distinct idea of that space. It becomes a confusedly great one, with a surplus of something still greater, and when we try to argue or reason about it, we will always find ourselves at a loss. For in our arguments and deductions, confused ideas, in the part of them that is confused, always lead us into confusion.

REAL AND FANTASTICAL IDEAS

Simple ideas and consistent mixed modes are real; ideas of substances are real only when they match things.

2.30.1 *Real ideas are those that conform to their archetypes.*—Besides what we have already said about ideas, there are other considerations that belong to them in reference to the things they are taken from, or that they may be supposed to represent. In this respect, I think, they fall under a threefold distinction. They are:

First, either real or fantastical.

Second, adequate or inadequate.

Third, true or false.

First, by real ideas I mean those that have a foundation in nature, that conform to the real being and existence of things, or to their archetypes. Fantastical or chimerical ideas I call those that have no foundation in nature, and do not conform to the reality of being to which they are tacitly referred as to their

archetypes. If we examine the various sorts of ideas already mentioned, we will find that:

2.30.2 *Simple ideas all real.*—First, our simple ideas are all real; they all agree with the reality of things. This is not to say that they are all images or representations of what exists; the contrary has already been shown for all but the primary qualities of bodies. But although whiteness and coldness are no more in snow than pain is, still those ideas of whiteness, coldness, pain, and so on are in us the effects of powers in things outside us, ordained by our Maker to produce such sensations in us. So they are real ideas in us, by which we distinguish the qualities that are really in things themselves. For these various appearances are designed to be the marks by which we are to know and distinguish the things we have to deal with. So our ideas serve us just as well for that purpose, and are just as real distinguishing characteristics, whether they are only constant effects or else exact resemblances of something in the things themselves. Their reality lies in the steady correspondence they have with the distinct constitutions of real beings. Whether they correspond to those constitutions as to causes or as to patterns does not matter; it is enough that they are constantly produced by them. And so our simple ideas are all real and true, because they correspond and agree to the powers of things that produce them in our minds. That is all that is needed to make them real, and not arbitrary fictions. For in simple ideas (as has been shown) the mind is wholly confined to the operation of things on it, and can make itself no simple idea beyond what it has received.

2.30.3 *Complex ideas are voluntary combinations.*—Though the mind is wholly passive with respect to its simple ideas, I think we can say it is not so with respect to its complex ideas. For these are combinations of simple ideas put together and united under one general name, so it is plain that the human mind uses a kind of liberty in forming those complex ideas. How else does it come about that one man's idea of gold, or justice, is different from another's, except that he has put into his, or left out of it, some simple idea that the other has not? The question, then, is

which of these are real combinations and which merely imaginary. Which collections agree with the reality of things, and which do not? To this I say:

2.30.4 *Mixed modes, made of consistent ideas, are real.*—Second, since mixed modes and relations have no reality other than what they have in men's minds, nothing more is required to make this kind of idea real than that it be so framed that there could possibly exist something conforming to it. These ideas are themselves archetypes, so they cannot differ from their archetypes, and so cannot be chimerical, unless someone jumbles inconsistent ideas together in them. It is true that insofar as any of them have been assigned names in a known language, by which whoever has them in mind would signify them to others, mere possibility of existing is not enough. They must conform to the ordinary meaning of the name given them, if they are not to be thought fantastical: as if a man were to give the name justice to the idea that common usage calls liberality. But this fantasticalness has more to do with propriety of speech than with the reality of ideas. For a man to be undisturbed in danger, to consider calmly what is best to be done, and to carry it out steadily, is a mixed mode, or a complex idea of an action that may exist. But to be undisturbed in danger without using one's reason or effort is also something that could possibly be, and so it is as real an idea as the other. The first of these, having been given the name courage, may be a right or a wrong idea with respect to that name. But the other, as long as it has not been assigned a commonly accepted name in any known language, cannot be deficient in conformity at all, since it is made with no reference to anything but itself.

2.30.5 *Ideas of substances are real when they agree with the existence of things.*—Third, our complex ideas of substances are all made in reference to things existing outside us, and are meant to be representations of substances as they really are. So they are real only insofar as they are combinations of simple ideas that are really united and coexist in things outside us. On the other hand, those are fantastical that are made up of collections of

simple ideas that were never really united, never found together in any substance. For example, a rational creature consisting of a horse's head joined to a body of human shape, as the centaurs are described; or a body that is yellow, very malleable, fusible, and fixed, but lighter than ordinary water; or a uniform, unorganized body, consisting, as far as the senses can tell, entirely of similar parts, with perception and voluntary motion joined to it. Whether such substances as these can possibly exist or not, we probably do not know. But however that may be, these ideas of substances conform to no existing pattern that we know of, and consist of collections of ideas that no substance has ever shown us united together, so we ought to regard them as merely imaginary. But complex ideas that contain any inconsistency or contradiction among their parts are imaginary much more so.

ADEQUATE AND INADEQUATE IDEAS

Simple ideas and modes are adequate; ideas of substances never fully represent their archetypes.

2.31.1 *Adequate ideas are such as perfectly represent their archetypes.*—Of our real ideas, some are adequate and some are inadequate. I call those adequate which perfectly represent the archetypes the mind supposes them taken from, which it intends them to stand for, and to which it refers them. Inadequate ideas are those which are only a partial or incomplete representation of the archetypes to which they are referred. On this account it is plain,

2.31.2 *Simple ideas all adequate.*—First, that all our simple ideas are adequate. They are nothing but the effects of certain powers in things, fitted and ordained by God to produce such sensations in us, and so they cannot fail to correspond to those powers and be adequate to them. We are sure they agree with the reality of things. For if sugar produces in us the ideas we call whiteness and sweetness, we are sure there is a power in sugar to produce those ideas in our minds; otherwise they could not have been produced by it. Each sensation answers to the power that oper-

ates on one of our senses. So the idea produced in this way is a real idea (and not a fiction of the mind, which has no power to produce any simple idea). It cannot fail to be adequate, since all it has to do is answer to that power. So all simple ideas are adequate. It is true that we name only a few of the things that produce these simple ideas in us as if they were merely the causes of them. For the most part we speak as if those ideas were real beings in them. For though fire is called painful to the touch, which means its power of producing in us the idea of pain, it is also called light and hot. We speak as if light and heat were really something in the fire beyond a power to excite these ideas in us, and so they are called qualities in, or of, the fire. But in truth these are nothing but powers to excite such ideas in us. So I must be understood in that sense when I speak of secondary qualities as being in things, or of their ideas as being in the objects that excite them in us. Such ways of speaking are fitted to popular notions, and without them one cannot be well understood. Yet they really signify nothing but the powers in things to excite certain sensations or ideas in us. Suppose there were no fit organs to receive the impressions that fire makes on sight and touch, and no mind joined to those organs to receive the ideas of light and heat through those impressions from the fire or the sun. Then there would be no more light or heat in the world than there would be pain if there were no sentient creature to feel it. This would hold even if the sun continued just as it is now, and Mount Etna flamed higher than it ever has. Solidity and extension, and the termination of extension, which is figure, together with motion and rest, are things of which we have the ideas. These would really be in the world as they are, whether or not there were any sentient being to perceive them. So we have reason to regard these as the real modifications of matter, and as the exciting causes of all our various sensations from bodies. But this inquiry does not belong here, so I shall go no further into it. I shall proceed to show which complex ideas are adequate and which are not.

2.31.3 *Modes are all adequate.*—Secondly, our complex ideas of modes are voluntary collections of simple ideas, which the mind puts together without reference to any real archetypes or standing patterns existing anywhere. So they are adequate ideas and cannot fail to be. They are not intended as copies of things that really exist, but as archetypes made by the mind to rank and name things by, and so they cannot lack anything. Each of them has the combination of ideas, and so the perfection, that the mind intended it to have. The mind therefore rests satisfied with them and can find nothing missing. Thus, by having the idea of a figure with three sides meeting at three angles, I have a complete idea, and I require nothing else to make it perfect. It is plain that the mind is satisfied with the perfection of this idea of its own, because it does not conceive that any understanding has, or can have, a more complete or perfect idea of the thing it signifies by the word triangle (supposing it to exist). The mind's own complex idea of three sides and three angles contains all that is or can be essential to that thing, or necessary to complete it, wherever or however it exists. But with our ideas of substances it is otherwise. For there we want to copy things as they really exist, and to represent to ourselves the constitution on which all their properties depend. We perceive that our ideas do not reach the perfection we intend. We find they always lack something we would be glad to have in them, and so they are all inadequate. But mixed modes and relations are archetypes without patterns, and so they have nothing to represent but themselves. They cannot fail to be adequate, since everything is adequate to itself. Take the man who first put together the idea of perceived danger, absence of the disorder that comes from fear, calm consideration of what was justly to be done, and carrying that out without being disturbed or deterred by the danger of it. He certainly had in his mind the complex idea made up of that combination. He intended it to be nothing else but what it is, and to contain no other simple ideas than those it has, so it could not fail to be an adequate idea. He stored it in his memory with the name courage attached to it, to signify it to

others and to name by it any action he should observe to agree with it. He thereby had a standard by which to measure and name actions, according as they agreed with it. This idea, made in this way and stored up as a pattern, must necessarily be adequate. It is referred to nothing but itself, and it was made from no other original than the liking and will of the man who first made this combination.

2.31.4 *Modes, in reference to settled names, may be inadequate.*—It is true that another man may come after him and learn the word courage from him in conversation. This second man may make an idea to which he gives the name courage, but which differs from the idea the first author applied it to and has in his mind when he uses it. In this case, suppose he means his idea in thinking to conform to the other man's idea, just as the name he uses in speaking conforms in sound to the name used by the man he learned it from. Then his idea may be very wrong and inadequate. For he makes the other man's idea the pattern of his own idea in thinking, as the other man's word or sound is the pattern of his in speaking. His idea is therefore defective and inadequate to the extent that it falls short of the archetype and pattern he refers it to, which he intends to express and signify by the name he uses for it. He wants that name to be a sign of the other man's idea (to which, in its proper use, it is primarily attached), and of his own idea as agreeing with it. If his own does not exactly correspond to it, his idea is faulty and inadequate.

2.31.5 Therefore, when the mind refers these complex ideas of modes to the ideas in the mind of some other intelligent being, expressed by the names we apply to them, and intends them to correspond to those ideas, they may be very deficient, wrong, and inadequate. This is because they do not agree with what the mind designs to be their archetype and pattern. This is the only respect in which any idea of modes can be wrong, imperfect, or inadequate. And on this account our ideas of mixed modes are more liable to be faulty than any others. But this concerns speaking properly more than knowing rightly.

2.31.6 *Ideas of substances, as referred to real essences, not adequate.*—Thirdly, I have shown above what ideas we have of substances. These ideas have a double reference in the mind. 1. Sometimes they are referred to a supposed real essence of each species of things. 2. Sometimes they are meant only as pictures and representations in the mind of things that do exist, made from ideas of the qualities that can be discovered in them. In both these ways, these copies of those originals and archetypes are imperfect and inadequate.

First, men usually make the names of substances stand for things that are supposed to have certain real essences, by which they belong to this or that species. And since names stand for nothing but the ideas in men's minds, men must consequently refer their ideas to such real essences as their archetypes. Men do suppose that substances have certain specific essences, which each individual of the several kinds is made to conform to and partakes of. This is especially true of those brought up in the learning taught in this part of the world. The point is so far from needing proof that people will think it strange if anyone supposes otherwise. And so men ordinarily apply the specific names under which they rank particular substances to things as distinguished by such specific real essences. There is scarcely anyone who would not take offense if someone doubted whether he called himself a man with any other meaning than that he has the real essence of a man. And yet if you ask what these real essences are, it is plain that men are ignorant of them and do not know them. It follows that the ideas in their minds are referred to real essences as to archetypes that are unknown. Such ideas are so far from being adequate that they cannot be supposed to represent those essences at all. The complex ideas we have of substances are, as has been shown, certain collections of simple ideas that have been observed or supposed to exist together constantly. But such a complex idea cannot be the real essence of any substance. If it were, the properties we discover in that body would depend on that complex idea and be deducible from it, and their necessary connection with it would

be known. All the properties of a triangle depend in this way on the complex idea of three lines enclosing a space, and as far as they can be discovered, they are deducible from it. But it is plain that our complex ideas of substances do not contain ideas on which all the other qualities found in them depend. The common idea men have of iron is of a body of a certain color, weight, and hardness, and they regard malleability as a property belonging to it. Yet this property has no necessary connection with that complex idea or any part of it. There is no more reason to think that malleability depends on that color, weight, and hardness than to think that the color or the weight depends on its malleability. And yet, though we know nothing of these real essences, nothing is more common than for men to attribute the sorts of things to such essences. Take the particular parcel of matter that makes up the ring I have on my finger. Most men readily suppose that it has a real essence by which it is gold, and from which flow the qualities I find in it. These are its peculiar color, weight, hardness, fusibility, fixedness, and change of color at a slight touch of mercury, etc. When I inquire into this essence from which all these properties flow, and search for it, I plainly perceive that I cannot discover it. The furthest I can go is to presume that, since it is nothing but body, its real essence or internal constitution, on which these qualities depend, can be nothing but the figure, size, and connection of its solid parts. I have no distinct perception at all of any of these, so I can have no idea of its essence. That essence is the cause of its particular shining yellowness, its greater weight than anything else I know of the same bulk, and its fitness to have its color changed by the touch of quicksilver. Someone may say that the real essence and internal constitution on which these properties depend is not the figure, size, and arrangement or connection of its solid parts, but something else, called its particular form. In that case I am further from having any idea of its real essence than I was before. For I do have an idea of the figure, size, and situation of solid parts in general. What I lack is any idea of the particular figure, size, or arrangement of parts by which the qualities men-

tioned above are produced. I find those qualities in the particular parcel of matter on my finger, and not in another parcel of matter with which I cut the pen I write with. But suppose I am told that the essence of that body is something other than the figure, size, and position of its solid parts, something called "substantial form." I confess I have no idea of that at all. I have an idea only of the sound "form," which is far from being an idea of its real essence or constitution. My ignorance of the real essence of this particular substance extends to the real essence of all other natural substances. I confess I have no distinct ideas at all of those essences. And I am inclined to suppose that others, when they examine their own knowledge, will find in themselves the same sort of ignorance on this one point.

2.31.7 Now, then, when men apply a general name already in use to this particular parcel of matter on my finger, and call it gold, what do they mean? Do they not ordinarily give it that name as belonging to a particular species of bodies having a real internal essence? Or at least, are they not understood to do so? On this view, it is by having that essence that this particular substance comes to be of that species and to be called by that name. It plainly is so. If so, the name by which things are marked as having that essence must be referred primarily to that essence. Consequently, the idea to which that name is given must also be referred to the essence and be intended to represent it. Those who use the names in this way do not know that essence. So their ideas of substances must all be inadequate in that respect, since they do not contain the real essence which the mind intends them to contain.

2.31.8 *Ideas of substances, as collections of their qualities, are all inadequate.*—Secondly, there are those who set aside that useless supposition of unknown real essences by which substances are distinguished. They try instead to copy the substances that exist in the world by putting together the ideas of the sensible qualities found coexisting in them. These come much nearer to a likeness of those substances than those who imagine they know not what real specific essences. Yet they still do not arrive at per-

fectly adequate ideas of the substances they would thus copy into their minds. Nor do those copies exactly and fully contain all that is to be found in their archetypes. For the qualities and powers of substances, out of which we make our complex ideas of them, are so many and so various that no man's complex idea contains them all. Our abstract ideas of substances do not contain all the simple ideas that are united in the things themselves. This is evident because men rarely put into their complex idea of any substance even all the simple ideas they do know to exist in it. For they try to make the meaning of their specific names as clear and as little cumbersome as they can. So they mostly make their specific ideas of the sorts of substances out of a few of the simple ideas found in them. But these few have no original precedence over the others that are left out, and no better right to be put in and make up the specific idea. It is plain, then, that in both these ways our ideas of substances are deficient and inadequate. The simple ideas out of which we make our complex ideas of substances are all powers, apart from the figure and bulk of some sorts. Powers are relations to other substances, so we can never be sure we know all the powers in any one body until we have tried what changes it is fitted to give to, or receive from, other substances when applied to them in their several ways. This cannot possibly be tried on any one body, much less on all. So it is impossible for us to have adequate ideas of any substance that are made up of a collection of all its properties.

2.31.9 Whoever first came upon a parcel of the sort of substance we denote by the word gold could not rationally take the bulk and figure he observed in that lump to depend on its real essence or internal constitution. So those never went into his idea of that species of body. Rather, its peculiar color, perhaps, and its weight were the first qualities he abstracted from it to make the complex idea of that species. Both of these are only powers. The first is a power to affect our eyes in a certain way and produce in us the idea we call yellow. The second is a power to force upward any other body of equal bulk, when the two are put against each other in a pair of equal scales. Another person

perhaps added to these the ideas of fusibility and fixedness, two further passive powers relating to the operation of fire on it. Another added its ductility and its solubility in aqua regia, two other powers relating to the operation of other bodies in changing its outward figure or separating it into insensible parts. These, or some of these, put together usually make up the complex idea in men's minds of the sort of body we call gold.

2.31.10 But no one who has considered the properties of bodies in general, or of this sort in particular, can doubt that this thing called gold has an infinity of other properties not contained in that complex idea.

Some who have examined this species more carefully could, I believe, list ten times as many properties in gold, all of them as inseparable from its internal constitution as its color or weight. And suppose anyone knew all the properties of this metal that are known to various men. Then a hundred times as many ideas would probably go into his complex idea of gold as any one man yet has in his. And yet perhaps that would not be a thousandth part of what is to be discovered in it. For the changes that this one body is apt to receive, and to make in other bodies when duly applied, far exceed not only what we know but what we are apt to imagine. This will not seem much of a paradox to anyone who considers how far men still are from knowing all the properties of one figure that is not very complex, a triangle. Yet mathematicians have already discovered no small number of them.

2.31.11 *Ideas of substances, as collections of their qualities, are all inadequate.*—So all our complex ideas of substances are imperfect and inadequate. The same would be true of mathematical figures if we had to get our complex ideas of them only by collecting their properties in relation to other figures. How uncertain and imperfect our ideas of an ellipse would be if we had no other idea of it than a few of its properties! As it is, our plain idea contains the whole essence of that figure. From it we discover those properties, and we see demonstratively how they flow from it and are inseparable from it.

2.31.12 *Simple ideas ἔκτυπα, and adequate.*—Thus the mind has three sorts of abstract ideas, or nominal essences:

First, simple ideas, which are ἔκτυπα, or copies, but are nonetheless certainly adequate. They are intended to express nothing but the power in things to produce such a sensation in the mind. So that sensation, when it is produced, cannot fail to be the effect of that power. Thus the paper I write on has the power, in the light, to produce in me the sensation I call white. (I speak according to the common notion of light.) That sensation cannot fail to be the effect of such a power in something outside the mind, since the mind has no power to produce any such idea by itself. And since the idea is meant for nothing but the effect of such a power, that simple idea is real and adequate. The sensation of white in my mind is the effect of the power in the paper to produce it, and so it is perfectly adequate to that power. Otherwise that power would produce a different idea.

2.31.13 *Ideas of substances are ἔκτυπα, inadequate.*—Secondly, the complex ideas of substances are ectypes too, that is, copies. But they are not perfect copies, and not adequate. This is very evident to the mind. It plainly perceives that, whatever collection of simple ideas it makes of any existing substance, it cannot be sure that this collection exactly answers to all the simple ideas that are in that substance. For the mind has not tried all the operations of all other substances on it, and has not found all the alterations it would receive from other substances or cause in them. So it cannot have an exact, adequate collection of all its active and passive capacities. It therefore cannot have an adequate complex idea of the powers of any existing substance and of its relations, and that is the sort of complex idea of substances we have. Suppose, after all, that we could have in our complex idea an exact collection of all the secondary qualities or powers of some substance, and actually had it. We still would not thereby have an idea of the essence of that thing. For the powers or qualities we can observe are not the real essence of that substance; they depend on it and flow from it. So no collection of these qualities whatever can be the real essence of that

thing. It is plain from this that our ideas of substances are not adequate. They are not what the mind intends them to be. Besides, a man has no idea of substance in general, and does not know what substance is in itself.

2.31.14 *Ideas of modes and relations are archetypes, and cannot but be adequate.*—Thirdly, complex ideas of modes and relations are originals and archetypes. They are not copies. Nor are they made after the pattern of any real existence which the mind intends them to conform to and exactly answer. They are collections of simple ideas that the mind itself puts together, and each contains precisely all that the mind intends it to contain. So they are archetypes and essences of modes that may exist. They are designed only for such modes as conform exactly to those complex ideas when they do exist, and they belong only to such modes. The ideas of modes and relations, therefore, cannot fail to be adequate.

TRUE AND FALSE IDEAS

Locke argues that truth and falsehood belong to the tacit judgments made about ideas, not to ideas themselves.

2.32.1 *Truth and falsehood properly belong to propositions.*—Strictly speaking, truth and falsehood belong only to propositions. Yet ideas are often called true or false, for what words are not used with great latitude, and with some deviation from their strict and proper meanings? Still, I think that when ideas themselves are called true or false, there is always some secret or tacit proposition that is the ground of that description. We shall see this if we examine the particular occasions on which they come to be called true or false. In all of them we shall find some kind of affirmation or negation, which is the reason for that description. For our ideas are nothing but bare appearances or perceptions in our minds. So they cannot properly and simply in themselves be said to be true or false, any more than a single name of anything can be said to be true or false.

2.32.2 *Metaphysical truth contains a tacit proposition.*—It is true that both ideas and words may be said to be true in a metaphysical sense of the word truth. In that sense all other things that exist in any way are said to be true, that is, to be really such as they exist. Yet even in things called true in that sense, there is perhaps a secret reference to our ideas, regarded as the standards of that truth. This reference amounts to a mental proposition, though it usually goes unnoticed.

2.32.3 *No idea, as an appearance in the mind, true or false.*—But when we examine here whether our ideas are capable of being true or false, we are not inquiring into that metaphysical sense of truth. We are inquiring into the more ordinary sense of those words. And in that sense I say that none of the ideas in our minds is false, since they are only so many perceptions or appearances there. The idea of a centaur has no more falsehood in it when it appears in our minds than the name centaur has when it is pronounced by our mouths or written on paper. For truth or falsehood always lies in some affirmation or negation, mental or verbal. So none of our ideas is capable of being false until the mind passes some judgment on it, that is, affirms or denies something of it.

2.32.4 *Ideas referred to any thing, may be true or false.*—Whenever the mind refers any of its ideas to anything outside them, they are then capable of being called true or false. For in such a reference the mind makes a tacit supposition that they conform to that thing. If this supposition happens to be true, the ideas themselves come to be called true; if false, false. The most usual cases in which this happens are the following:

2.32.5 *Other men's ideas, real existences, and supposed real essences are what men usually refer their ideas to.*—First, when the mind supposes that an idea it has conforms to the idea in other men's minds that is called by the same common name. For example, the mind intends or judges its ideas of justice, temperance, and religion to be the same as the ideas to which other men give those names.

Secondly, when the mind supposes that an idea it has in itself conforms to some real existence. Take the two ideas of a man and of a centaur, supposed to be ideas of real substances. The first is true and the second false, because the first conforms to what has really existed and the second does not.

Thirdly, when the mind refers any of its ideas to the real constitution and essence of anything, on which all its properties depend. In this way the greatest part of our ideas of substances are false, if not all of them.

2.32.6 *The cause of such references.*—The mind is very apt to make these suppositions tacitly about its own ideas. But if we examine the matter, we shall find that it makes them chiefly, if not only, about its abstract complex ideas. For the natural tendency of the mind is toward knowledge. The mind finds that if it proceeded by particular things and dwelt on them, its progress would be very slow and its work endless. So it looks for a way to shorten its path to knowledge and make each perception more comprehensive. It wants a foundation for enlarging its knowledge more easily, whether by contemplating the things it wants to know or by conferring with others about them. The first thing it does, then, is to bind things into bundles and rank them into sorts. In this way, whatever knowledge it gets of any of them it may confidently extend to all of that sort. And so it advances by larger steps in its great business, knowledge. This, as I have shown elsewhere, is the reason why we collect things under comprehensive ideas, with names attached to them, into genera and species, that is, into kinds and sorts.

2.32.7 Suppose, then, we carefully attend to the motions of the mind, and observe what course it usually takes on its way to knowledge. We shall, I think, find that when the mind has got an idea it thinks it may have use for, either in contemplation or in discourse, the first thing it does is to abstract it and then get a name for it. It then stores it in its storehouse, the memory, as containing the essence of a sort of things, of which that name is always to be the mark. Hence we may often observe that when anyone sees a new thing of a kind he does not know, he immedi-

ately asks what it is. By that question he means nothing but its name, as if the name carried with it the knowledge of the species, or of its essence. The name is indeed used as the mark of that essence, and is generally supposed to be attached to it.

2.32.8 *The cause of such references.*—But this abstract idea is something in the mind between the thing that exists and the name given to it. So it is in our ideas that both the rightness of our knowledge and the propriety or intelligibility of our speaking consist. This is why men are so quick to make a double supposition about the abstract ideas in their minds. They suppose that these ideas agree with the things existing outside them to which they are referred. They also suppose that these ideas are the same ones to which the names they give them belong, by the usage and propriety of that language. For they find that without this double conformity of their ideas, they would both think wrongly of things in themselves and speak of them unintelligibly to others.

2.32.9 *Simple ideas may be false, in reference to others of the same name, but are least liable to be so.*—First, then, I say that any of our ideas may be false when their truth is judged by their conformity to the ideas which other men have and commonly signify by the same name. But simple ideas are the least liable of all to be mistaken in this way. By his senses and everyday observation, a man can easily satisfy himself what simple ideas the various names in common use stand for. They are few in number, and if he doubts or makes a mistake about them, he can easily correct it by the objects in which they are found. So it is seldom that anyone makes a mistake in his names of simple ideas, applying the name red to the idea of green, or the name sweet to the idea of bitter. Still less are men apt to confuse the names of ideas belonging to different senses, and call a color by the name of a taste, etc. From this it is evident that the simple ideas men call by any name are commonly the same ones that others have and mean when they use the same names.

2.32.10 *Ideas of mixed modes most liable to be false in this sense.*—Complex ideas are much more liable to be false in this respect,

and the complex ideas of mixed modes much more than those of substances. In substances, some notable sensible qualities ordinarily serve to distinguish one sort from another. This is especially true of the substances to which the common, native names of a language are applied. These qualities easily keep those who take any care in the use of their words from applying them to sorts of substances to which they do not belong at all. But with mixed modes we are much more uncertain. It is not so easy to decide, for many actions, whether they are to be called justice or cruelty, liberality or prodigality. And so, when we refer our ideas to those of other men that are called by the same names, ours may be false. The idea in our minds which we express by the word justice may perhaps be one that ought to have another name.

2.32.11 *Or at least to be thought false.*—Perhaps our ideas of mixed modes are more liable than any other sort to differ from the ideas of other men marked by the same names, and perhaps not. But this at least is certain: this sort of falsehood is much more commonly attributed to our ideas of mixed modes than to any others. When a man is thought to have a false idea of justice, or gratitude, or glory, the only reason is that his idea does not agree with the ideas of which each of those names is the sign in other men.

2.32.12 *And why.*—The reason for this seems to me to be as follows. The abstract ideas of mixed modes are men's voluntary combinations of a precise collection of simple ideas. So the essence of each species is made by men alone, and it has no sensible standard existing anywhere except the name itself, or the definition of that name. We therefore have nothing else to refer these ideas of mixed modes to, as a standard for them to conform to, except the ideas of those who are thought to use those names in their most proper meanings. And so our ideas pass for true or false according as they conform to those ideas or differ from them. So much for the truth and falsehood of our ideas in reference to their names.

2.32.13 *As referred to real existences, none of our ideas can be false, but those of substances.*—Secondly, we come to the truth and falsehood of our ideas in reference to the real existence of things. When that is made the standard of their truth, none of them can be called false except our complex ideas of substances.

2.32.14 *First, simple ideas in this sense not false, and why.*—First, our simple ideas are merely such perceptions as God has fitted us to receive. He has given external objects the power to produce them in us by established laws and ways, which suit his wisdom and goodness, though we cannot comprehend them. Their truth, therefore, consists in nothing else but the appearances produced in us. These appearances must be suited to the powers God has placed in external objects, or else they could not be produced in us. And since they answer to those powers in this way, they are what they should be: true ideas. Nor do they become open to any charge of falsehood if the mind judges these ideas to be in the things themselves, as I believe most men's minds do. For God in his wisdom has set them as marks of distinction in things, so that we may be able to tell one thing from another, and so choose any of them for our uses as occasion requires. The nature of our simple idea is not altered, whichever way we think. We may think that the idea of blue is in the violet itself. Or we may think it is only in our mind, and that the violet itself has only the power of producing it, by the texture of its parts reflecting the particles of light in a certain way. For that texture in the object produces the same idea of blue in us by a regular and constant operation. So it serves us to distinguish that thing by our eyes from any other thing. It does so whether that distinguishing mark, as it really is in the violet, is only a peculiar texture of parts, or is that very color of which the idea (which is in us) is the exact resemblance. And the violet is equally to be called blue from that appearance, whether what causes that idea in us is that real color or only a peculiar texture in it. For the name blue properly denotes nothing but that mark of distinction in a violet which is discernible only by our eyes, whatever it consists in. What it consists in is beyond our capacity to know distinctly,

and would perhaps be of less use to us if we had faculties to discern it.

2.32.15 *Though one man's idea of blue should be different from another's.*—Nor would our simple ideas be guilty of any falsehood if, because of the different structure of our organs, things were so arranged that the same object produced different ideas in several men's minds at the same time. For example, suppose the idea that a violet produced through the eyes in one man's mind were the same as the one a marigold produced in another man's, and vice versa. This could never be known, because one man's mind could not pass into another man's body to perceive what appearances those organs produced. So neither the ideas nor the names would be confused in the least, and there would be no falsehood in either. For all things that had the texture of a violet would constantly produce the idea he called blue, and those that had the texture of a marigold would constantly produce the idea he just as constantly called yellow. So, whatever those appearances were in his mind, he could distinguish things for his use by them just as regularly. He could also understand and signify the distinctions marked by the names blue and yellow, just as if the appearances, or ideas, that he received from those two flowers were exactly the same as the ideas in other men's minds. Nevertheless, I am strongly inclined to think that the sensible ideas produced by any object in different men's minds are most commonly very nearly alike, so alike that no one could tell them apart. Many reasons could be offered for this opinion, I think. But since that is outside my present business, I will not trouble the reader with them. I will only remind him that the contrary supposition, even if it could be proved, is of little use either for improving our knowledge or for the conveniences of life, and so we need not trouble ourselves to examine it.

2.32.16 *First, simple ideas in this sense not false, and why.*—From what has been said about our simple ideas, I think it is evident that none of them can be false with respect to things existing outside us. The truth of these appearances, or perceptions in our minds, consists, as has been said, only in their answering to the

powers in external objects to produce such appearances in us through our senses. And each of them, being in the mind just as it is, suits the power that produced it, which is all it represents. On that account, then, that is, as referred to such a pattern, it cannot be false. Blue or yellow, bitter or sweet, can never be false ideas. These perceptions in the mind are just what they are there, answering to the powers God appointed to produce them, and so they are truly what they are and are meant to be. The names may indeed be misapplied, but in this respect that makes no falsehood in the ideas. It is like a man who does not know English calling purple scarlet.

2.32.17 *Secondly, modes not false.*—Secondly, our complex ideas of modes cannot be false either, in reference to the essence of anything really existing. For whatever complex idea I have of any mode, it has no reference to any pattern that exists and is made by nature. It is not supposed to contain any ideas other than the ones it has, or to represent anything except the particular combination of ideas that it does. Take a man who refrains from allowing himself the food, drink, clothing, and other conveniences of life that his wealth and property are enough to supply and his station requires. When I have the idea of such an action, I have no false idea. I have one that represents an action, either as I find it or as I imagine it, and so it is capable of neither truth nor falsehood. But when I give this action the name frugality or virtue, it may then be called a false idea. That happens if the name implies that it agrees with the idea to which, in proper usage, the name frugality belongs, or that it conforms to the law that is the standard of virtue and vice.

2.32.18 *Thirdly, ideas of substances, when false.*—Thirdly, our complex ideas of substances may be false, since they are all referred to patterns in things themselves. That they are all false when regarded as representations of the unknown essences of things is so evident that nothing needs to be said about it. I shall therefore pass over that fanciful supposition. Instead I will consider them as collections of simple ideas in the mind, taken from combinations of simple ideas that constantly exist together in

things; these combinations are the patterns of which our ideas are supposed to be copies. When they are referred in this way to the existence of things, they are false ideas in the following cases. 1. When they put together simple ideas that have no union in the real existence of things. Suppose someone joins the shape and size that exist together in a horse with the power of barking like a dog, all in the same complex idea. However these three ideas are put together into one in the mind, they were never united in nature, and so this may be called a false idea of a horse. 2. Ideas of substances are also false in this respect when some simple idea that is constantly joined with a collection of simple ideas that always exist together is separated from them by a direct negation. Take the extension, solidity, fusibility, peculiar heaviness, and yellow color of gold. If someone joins to these in his thoughts the negation of any greater degree of fixedness than there is in lead or copper, he may be said to have a false complex idea. The same is true when he joins to those other simple ideas the idea of perfect, absolute fixedness. Either way, the complex idea of gold may be called false, because it is made up of simple ideas that have no union in nature. But suppose he leaves fixedness out of his complex idea altogether, neither actually joining it to the rest in his mind nor separating it from them. Then I think it should be regarded as an inadequate and imperfect idea rather than a false one. For though it does not contain all the simple ideas that are united in nature, it puts together only those that really do exist together.

2.32.19 *Truth or falsehood always supposes affirmation or negation.*— In keeping with the ordinary way of speaking, I have shown in what sense and on what grounds our ideas may sometimes be called true or false. Still, if we look a little more closely into the matter, whenever an idea is called true or false, what is really true or false is some judgment that the mind makes, or is supposed to make. For truth or falsehood never exists without some affirmation or negation, express or tacit. So it is found only where signs are joined or separated according to the agreement or disagreement of the things they stand for. The signs we

chiefly use are either ideas or words, and with them we make either mental or verbal propositions. Truth lies in joining or separating these representatives just as the things they stand for agree or disagree in themselves. Falsehood lies in the contrary, as will be shown more fully later.

2.32.20 *Ideas in themselves neither true nor false.*—So any idea we have in our minds cannot properly be called false for this reason alone, whether or not it conforms to the existence of things or to any idea in other men's minds. If these representations contain nothing but what really exists in things outside us, they cannot be thought false, since they are exact representations of something. And if they contain something that differs from the reality of things, they still cannot properly be called false representations, or ideas of things they do not represent. Rather, the mistake and falsehood lie in the following cases:

2.32.21 *But are false*—1. *When judged to agree with another man's idea without doing so.*—First, when the mind has some idea and judges and concludes that it is the same as the idea in other men's minds signified by the same name, or that it conforms to the ordinary accepted meaning or definition of that word, when in fact it does not. This is the most usual mistake in mixed modes, though other ideas are liable to it as well.

2.32.22 2. *When judged to agree with real existence when they do not.* —Secondly, when the mind has a complex idea made up of a collection of simple ideas that nature never puts together, and judges that it agrees with a species of creatures that really exists. An example is joining the weight of tin to the color, fusibility, and fixedness of gold.

2.32.23 3. *When judged adequate without being so.*—Thirdly, when the mind has united in its complex idea a certain number of simple ideas that really do exist together in some sort of creatures, but has left out others that are just as inseparable. It then judges this to be a perfect, complete idea of a sort of things, which it really is not. For example, having joined the ideas of substance, yellow, malleable, very heavy, and fusible, it takes that complex idea to be the complete idea of gold. Yet gold's

peculiar fixedness and its solubility in aqua regia are as inseparable from those other ideas or qualities of that body as those are from one another.

2.32.24 4. *When judged to represent the real essence.*—Fourthly, the mistake is greater still when I judge that this complex idea contains the real essence of some existing body. At most it contains only a few of the properties that flow from that body's real essence and constitution. I say only a few of those properties. For those properties consist mostly in the active and passive powers the body has in relation to other things. All the powers commonly known of any one body, from which the complex idea of that kind of thing is usually made, are very few compared with what a man who has tested and examined it in various ways knows of that one sort of thing. And all that the most expert man knows is only a little compared with what is really in that body and depends on its internal or essential constitution. The essence of a triangle lies in a very small compass and consists of very few ideas: three lines enclosing a space make up that essence. But the properties that flow from this essence are more than can easily be known or listed. I imagine it is the same with substances. Their real essences lie in a small compass, though the properties flowing from that internal constitution are endless.

2.32.25 *Ideas, when false.*—To conclude: a man has no notion of anything outside him except through the idea of it that he has in his mind, and he has the power to call that idea by whatever name he pleases. So he may indeed make an idea that neither answers to the nature of things nor agrees with the idea commonly signified by other people's words. But he cannot make a wrong or false idea of a thing that he knows only through the idea he has of it. For example, suppose I frame an idea of the legs, arms, and body of a man and join to it a horse's head and neck. I do not make a false idea of anything, because it represents nothing outside me. But suppose I call it a man or a Tartar, and imagine that it represents some real being outside me, or that it is the same idea that others call by the same name. In

either of these cases I may be in error. This is how it comes to be called a false idea. In fact, though, the falsehood lies not in the idea but in the tacit mental proposition that attributes to it a conformity and resemblance it does not have.[29] But suppose I have framed such an idea in my mind without thinking that existence, or the name man or Tartar, belongs to it, and I still choose to call it man or Tartar. Then I may justly be thought whimsical in my naming, but not mistaken in my judgment, and the idea is in no way false.

2.32.26 *More properly to be called right or wrong.*—All things considered, I think the best names for our ideas are right or wrong ideas, according as they agree or disagree with the patterns to which they are referred. That holds whether the mind considers them in reference to the proper meaning of their names or in reference to the reality of things. But if anyone prefers to call them true or false, it is fair that he use the liberty everyone has to call things by the names he thinks best. Still, in proper speech, I think truth or falsehood will hardly apply to them, except insofar as they in some way virtually contain some mental proposition. The ideas in a man's mind, considered simply in themselves, cannot be wrong, except for complex ones in which inconsistent parts are jumbled together. All other ideas are right in themselves, and knowledge about them is right and true knowledge. But when we come to refer them to something as their patterns and archetypes, then they can be wrong, to the extent that they disagree with those archetypes.

THE ASSOCIATION OF IDEAS

Locke shows how chance and custom link unrelated ideas, causing antipathies, lasting fears and sectarian errors.

2.33.1 *Something unreasonable in most men.*—There is hardly anyone who does not notice something in the opinions, reasonings, and actions of other men that seems odd to him and is really extra-

29 "Tartar" was the common European name for the peoples of Central Asia and the Russian steppe.

vagant in itself. Everyone is sharp-sighted enough to spot the least flaw of this kind in another, if it differs at all from his own, and will readily condemn it on the authority of reason. Yet he himself is guilty of much greater unreasonableness in his own beliefs and conduct. He never perceives it, and can be convinced of it only with great difficulty, if at all.

2.33.2 *Not wholly from self-love.*—This does not come wholly from self-love, though that often has a large hand in it. Fair-minded men who are not given over to excessive self-flattery are frequently guilty of it. In many cases one listens with amazement to the arguments of a worthy man, and is astonished at his obstinacy, when he will not yield to the evidence of reason, though it is laid before him as clear as daylight.

2.33.3 *Not from education.*—This sort of unreasonableness is usually blamed on education and prejudice, and for the most part rightly enough. But that explanation does not reach the bottom of the disease, or show clearly enough where it comes from or what it consists in. Education is often rightly named as the cause, and prejudice is a good general name for the thing itself. Still, anyone who wants to trace this sort of madness to its root ought, I think, to look a little further. He should explain how this flaw originates in very sober and rational minds, and what it consists in.

2.33.4 *A degree of madness.*—I shall be pardoned for calling it by so harsh a name as madness when it is considered that opposition to reason deserves that name and really is madness. Hardly any man is so free of it that he would not be thought fitter for Bedlam than for civil company, if he always argued or acted as he constantly does in some cases. I do not mean when he is in the grip of some unruly passion, but in the steady, calm course of his life. There is a further excuse for this harsh name, and for this unwelcome charge against most of mankind. When I inquired a little in passing into the nature of madness (Book II, Chapter 11, Section 13), I found it to spring from the very same root and to depend on the very same cause we are speaking of here. It was the consideration of the thing itself that suggested

this to me, at a time when I was not thinking in the least of the subject I am now treating. And if this is a weakness to which all men are so liable, a taint that infects mankind so universally, then all the more care should be taken to expose it under its proper name. That will stir up greater care in preventing and curing it.

2.33.5 *From a wrong connection of ideas.*—Some of our ideas have a natural correspondence and connection with one another. It is the task and excellence of our reason to trace these and hold them together in the union and correspondence that is grounded in their particular natures. Besides this, there is another connection of ideas that is owed wholly to chance or custom. Ideas that in themselves are not related at all come to be so united in some men's minds that it is very hard to separate them. They always keep company, and whenever one comes into the understanding, its associate appears with it. If more than two are united in this way, the whole gang, always inseparable, show up together.

2.33.6 *This connection how made.*—The mind makes this strong combination of ideas that are not allied by nature, either voluntarily or by chance. So it comes to be very different in different men, according to their different inclinations, education, interests, and so on. Custom settles habits of thinking in the understanding, just as it settles habits of determining in the will and of motion in the body. All of these seem to be nothing but trains of motion in the animal spirits. Once set going, these continue in the same steps they are used to. By frequent treading those steps are worn into a smooth path, and the motion along it becomes easy and, as it were, natural. As far as we can comprehend thinking, this seems to be how ideas are produced in our minds. Even if it is not, it may serve to explain how ideas follow one another in a habitual train once they are put on their track, just as it explains such motions of the body. A musician who is used to a tune will find that once it begins in his head, the ideas of its notes follow one another in order in his understanding, without any care or attention. They follow as regularly as his fin-

gers move in order over the keys of the organ to play out the tune he has begun, even while his inattentive thoughts wander elsewhere. Whether the natural cause of these ideas, and of that regular dancing of his fingers, is the motion of his animal spirits, I will not decide, however probable this example makes it seem. But it may help us a little to conceive of intellectual habits and of the tying together of ideas.

2.33.7 *Some antipathies an effect of it.*—I think no one who has carefully considered himself or others will question that custom makes such associations of ideas in the minds of most men. Perhaps most of the sympathies and antipathies we observe in men might justly be attributed to this. They work as strongly and produce effects as regular as if they were natural, and so they are called natural. Yet at first they had no other origin than the accidental connection of two ideas. Either the strength of the impression or later indulgence united those ideas so firmly that they always kept company in that man's mind afterward, as if they were only one idea. I say most of the antipathies, not all. Some of them are truly natural: they depend on our original constitution and are born with us. But many of those counted natural would have been recognized, if they had been carefully observed, as coming from unnoticed, though perhaps early, impressions, or from whimsical fancies at the start. Take a grown man who has eaten too much honey. As soon as he hears its name, his imagination brings sickness and queasiness to his stomach, and he cannot bear the very idea of it. Other ideas of dislike, sickness, and vomiting at once accompany it, and he is upset. But he knows when this weakness began and can tell how he acquired the aversion. If this had happened to him from an overdose of honey when he was a child, all the same effects would have followed, but the cause would have been mistaken and the antipathy counted natural.

2.33.8 I mention this not because the present argument has any great need to distinguish precisely between natural and acquired antipathies. I note it for another purpose, namely, that those who have children, or who are in charge of their educa-

tion, may think it worth their while to watch diligently and carefully prevent the improper connection of ideas in the minds of young people. This is the age most susceptible to lasting impressions. Sensible people attend to and guard against the impressions that affect the health of the body. But I suspect that those relating more particularly to the mind, which end in the understanding or the passions, have been heeded much less than the matter deserves. Indeed, I suspect that most men have wholly overlooked those relating purely to the understanding.

2.33.9 *A great cause of errors.*—This wrong connection in our minds of ideas that in themselves are loose and independent of one another has great influence and power to lead us astray. It distorts our actions, moral as well as natural, and our passions, our reasonings, and even our notions themselves. Perhaps no single thing deserves more to be looked after.

2.33.10 *Instances.*—The ideas of goblins and sprites really have no more to do with darkness than with light. Yet let a foolish maidservant often press these ideas on a child's mind and raise them there together with darkness, and he may never be able to separate them again as long as he lives. Darkness will forever after bring those frightening ideas with it, and they will be so joined that he can no more bear the one than the other.

2.33.11 A man suffers a keenly felt injury from another and thinks over the man and that action again and again. By brooding on them intensely or at length, he cements those two ideas together so firmly that he makes them almost one. He never thinks of the man without the pain and displeasure he suffered coming into his mind as well. He hardly distinguishes them, and has as much aversion to the one as to the other. This is how hatreds are often bred from slight and almost innocent occasions, and how quarrels are spread and kept going in the world.

2.33.12 A man has suffered pain or sickness in some place, or he saw his friend die in a certain room. These things have nothing to do with one another in nature. Yet once the impression has been made, whenever the idea of the place comes to his mind it

brings the idea of the pain and displeasure with it. He confuses them in his mind and can bear the one as little as the other.

2.33.13 *Why time cures some disorders in the mind, which reason cannot.*—When this combination is settled, and as long as it lasts, reason has no power to help us and relieve us from its effects. Ideas in our minds, once they are there, will operate according to their natures and circumstances. Here we see why time cures certain affections over which reason has no power. Reason may be in the right, and be granted to be so, yet it cannot prevail against these affections, even with people who are inclined to listen to it in other cases. A mother loses a child who was the daily delight of her eyes and the joy of her soul. The death tears the whole comfort of her life from her heart and gives her every torment imaginable. Try the consolations of reason in this case, and you might as well preach ease to someone on the rack, and hope to soothe with rational discourses the pain of his joints being torn apart. Time, through disuse, must first separate the feeling of that enjoyment and its loss from the idea of the child as it returns to her memory. Until then, all appeals, however reasonable, are in vain. And so some people, in whom the union between these ideas is never dissolved, spend their lives in mourning and carry an incurable sorrow to their graves.

2.33.14 *Further instances of the effect of the association of ideas.*—A friend of mine knew a man who was completely cured of madness by a very harsh and painful operation. The gentleman who was thus restored acknowledged the cure with deep gratitude for the rest of his life, as the greatest favor he could have received. But whatever gratitude and reason told him, he could never bear the sight of the man who had operated on him. That image brought back with it the idea of the agony he had suffered at his hands, which was too overpowering and intolerable for him to endure.

2.33.15 Many children blame the pain they suffered at school on the books they were punished over. They join those ideas together so firmly that books become objects of aversion to them, and they are never reconciled to studying and using them

for the rest of their lives. So reading becomes a torment to them, when otherwise they might perhaps have made it the greatest pleasure of their lives. There are rooms, convenient enough, in which some men cannot study, and styles of drinking vessels they cannot drink from, however clean and handy. This is because some accidental ideas have become attached to them and make them offensive. And who has not observed some man lose heart at the sight or in the company of a certain person who is not otherwise his superior? It happens simply because that person once got the upper hand over him on some occasion. After that the idea of authority and distance goes along with the idea of the person, and the one who was thus subjected cannot separate them.

2.33.16 Instances of this kind are so plentiful everywhere that if I add one more, it is only for its amusing oddness. It concerns a young gentleman who learned to dance, and to great perfection, in a room where an old trunk happened to stand. The idea of this remarkable piece of furniture had so mixed itself with the turns and steps of all his dances that he could dance excellently in that room only while the trunk was there. Nor could he perform well anywhere else unless that trunk, or one like it, stood in its proper position in the room. Someone may suspect that this story has been dressed up with some comic touches that go a little beyond strict fact. I answer for myself that I had it some years ago from a very sober and worthy man, on his own knowledge, just as I report it. And I dare say there are very few inquisitive readers who have not met with accounts, if not instances, of this kind that may match it, or at least support it.

2.33.17 *Its influence on intellectual habits.*—Intellectual habits and defects contracted in this way are no less frequent and powerful, though they are less observed. Let the ideas of being and matter be strongly joined, either by education or by much thinking. As long as they remain combined in the mind, what notions, what reasonings will there be about separate spirits? Let custom from earliest childhood have joined figure and shape

to the idea of God, and what absurdities will that mind be liable to about the Deity?

Let the idea of infallibility be inseparably joined to some person, and let these two ideas constantly possess the mind together. Then one body in two places at once will be swallowed unexamined as a certain truth, by an implicit faith, whenever that supposedly infallible person dictates it and demands assent without inquiry.[30]

2.33.18 *Observable in different sects.*—Some such wrong and unnatural combinations of ideas will be found to underlie the irreconcilable opposition between different sects of philosophy and religion. For we cannot imagine that every one of their followers deliberately deceives himself and knowingly refuses truth offered by plain reason. Self-interest does a great deal in the matter. Still, it cannot be thought to drive whole societies of men into so universal a perverseness that every single one of them knowingly maintains falsehood. At least some must be granted to do what all of them claim to do, that is, to pursue truth sincerely. So there must be something that blinds their understandings and keeps them from seeing the falsehood of what they embrace as real truth. On examination, the thing that captivates their reason in this way, and leads sincere men blindfold away from common sense, will be found to be what we are speaking of. Some independent ideas, with no connection to one another, are so coupled in their minds by education, custom, and the constant din of their party that they always appear there together. They can no more separate them in their thoughts than if they were a single idea, and the ideas operate as if they were. This gives sense to jargon, demonstration to absurdities, and consistency to nonsense. It is the foundation of the greatest of the errors in the world, and I had almost said of all of them. If it does not reach that far, it is at least the most dangerous one, since wherever it takes hold, it keeps men from seeing and

30 Locke alludes to the Roman Catholic doctrine of transubstantiation (Christ's body present on many altars at once), accepted on the authority of an infallible pope or church.

examining. Suppose two things that are separate in themselves constantly appear united to the sight, so that the eye sees things riveted together that are really loose. Men become so used to joining two such ideas in their minds that they substitute one for the other, and, I am inclined to think, often without noticing it themselves. Where will you begin to correct the mistakes that follow? While they are under this deception, it makes them incapable of being convinced. They congratulate themselves as zealous champions of truth when in fact they are fighting for error. A customary connection in their minds has in effect made two different ideas into one for them, and this confusion fills their heads with false views and their reasonings with false conclusions.

2.33.19 *Conclusion.*—I have now given an account of the origin, sorts, and extent of our ideas, along with several other considerations about these instruments or materials of our knowledge (if I may call them that). The method I first proposed to myself would now require me to go straight on to show what use the understanding makes of them and what knowledge we have by them. When I first took a general view of this subject, this was all I thought I would have to do. But on a closer approach, I find a very close connection between ideas and words, and our abstract ideas and general words have so constant a relation to each other, that it is impossible to speak clearly and distinctly of our knowledge without first considering the nature, use, and signification of language, since all our knowledge consists in propositions. That, therefore, must be the business of the next book.

Book III: Of Words

How words signify ideas, general terms and abstraction, nominal and real essences, and the imperfections and abuses of language.

CHAPTER I. OF WORDS, OR LANGUAGE IN GENERAL.

3.1.1 *Man fitted to form articulate sounds.*—God designed man to be a sociable creature. So he made him with an inclination toward fellowship with his own kind and a need for it, and he also furnished him with language, which was to be the great instrument and common bond of society. By nature, therefore, man had his organs so shaped that he could form articulate sounds, which we call words. But this was not enough to produce language. Parrots and several other birds can be taught to make articulate sounds distinct enough, and yet they are by no means capable of language.

3.1.2 *To make them signs of ideas.*—Besides articulate sounds, then, man also needed to be able to use these sounds as signs of internal conceptions. He had to make them stand as marks for the ideas within his own mind, so that these might be made known to others and the thoughts of men's minds be conveyed from one to another.

3.1.3 *To make general signs.*—But even this was not enough to make words as useful as they ought to be. For the perfection of language, it is not enough that sounds can be made signs of ideas. Those signs must also be usable in a way that covers several particular things. If every particular thing needed a distinct name to signify it, the sheer number of words would have made them confusing to use. To remedy this inconvenience, language

was further improved by the use of general terms, so that one word was made to mark a multitude of particular existing things. This advantageous use of sounds came about only through the difference between the ideas they were made signs of. Names that are made to stand for general ideas become general, and names remain particular where the ideas they are used for are particular.

3.1.4 Besides these names that stand for ideas, men use other words that signify not any idea, but the lack or absence of some ideas, simple or complex, or of all ideas together. Examples are *nihil* in Latin, and in English *ignorance* and *barrenness*. None of these negative or privative words can properly be said to belong to no ideas or to signify no ideas, for then they would be perfectly meaningless sounds. Rather, they relate to positive ideas and signify their absence.

3.1.5 *Words ultimately derived from such as signify sensible ideas.*— It may also lead us a little way toward the origin of all our notions and knowledge if we notice how greatly our words depend on common sensible ideas. Words used for actions and notions quite removed from sense have their origin there. They are carried over from obvious sensible ideas to more abstruse meanings, and made to stand for ideas that our senses cannot take in. For example, imagine, apprehend, comprehend, adhere, conceive, instill, disgust, disturbance, tranquility, and so on, are all words taken from the operations of sensible things and applied to certain modes of thinking. Spirit, in its primary meaning, is breath; angel, a messenger. I do not doubt that if we could trace such words to their sources, we would find the same in all languages: the names that stand for things our senses cannot perceive first arose from sensible ideas. From this we may make some kind of guess at what notions filled the minds of those who first began languages, and where those notions came from. We may also see how nature, even in the naming of things, unwittingly suggested to men the origins and principles of all their knowledge. They wanted to give names that would make known to others the operations they felt in themselves, or

any other ideas that do not come under their senses. To do so they had to borrow words from ordinary, familiar ideas of sensation. That way others could more easily conceive the operations they experienced in themselves, which made no outward sensible appearance: and then, once they had names that were known and agreed on to signify those internal operations of their own minds, they were well enough equipped to make all their other ideas known by words. For those ideas could consist of nothing but outward sensible perceptions or the inward operations of their minds about them. As has been proved, we have no ideas at all except those that originally come either from sensible objects outside us, or from what we feel within ourselves, from the inner workings of our own spirits, of which we are conscious within.

3.1.6 *Distribution.*—To understand better the use and force of language as it serves instruction and knowledge, it will be useful to consider the following.

First, what it is that names, in the use of language, are immediately applied to.

Second, all names except proper names are general. They do not stand for this or that single thing in particular, but for sorts and ranks of things. So it will be necessary to consider next what the sorts and kinds of things are (or, if you prefer the Latin names, the species and genera of things), what they consist in, and how they come to be made. Once these are properly looked into, as they should be, we will be better able to find the right use of words, the natural advantages and defects of language, and the remedies we ought to use to avoid the drawbacks of obscurity or uncertainty in the signification of words. Without this it is impossible to discuss knowledge with any clarity or order. For knowledge deals with propositions, most commonly universal ones, and so it has a greater connection with words than is perhaps suspected.

These considerations, then, will be the subject of the following chapters.

THE SIGNIFICATION OF WORDS

Words are arbitrary sensible signs, and they stand first for the ideas in the speaker's own mind.

3.2.1 *Words are sensible signs necessary for communication.*—Man has a great variety of thoughts, and they are thoughts from which others as well as himself might gain profit and delight. Yet they are all within his own breast, invisible and hidden from others, and they cannot be made to appear by themselves. The comfort and advantage of society cannot be had without the communication of thoughts. So man had to find some external, sensible signs by which the invisible ideas his thoughts are made up of could be made known to others. For this purpose nothing was so fit, either for abundance or for quickness, as the articulate sounds he found he could make with such ease and variety. This lets us see how men came to use words as the signs of their ideas, since words were by nature so well suited to that purpose. This is not through any natural connection between particular articulate sounds and certain ideas, for then there would be only one language among all men. It is by a voluntary imposition, by which a given word is arbitrarily made the mark of a given idea. The use of words, then, is to be sensible marks of ideas, and the ideas they stand for are their proper and immediate signification.

3.2.2 *Words are the sensible signs of the ideas of the person who uses them.*—Men use these marks either to record their own thoughts as an aid to their own memory, or, as it were, to bring out their ideas and lay them before the view of others. So words in their primary or immediate signification stand for nothing but the ideas in the mind of the person who uses them. This holds however imperfectly or carelessly those ideas have been gathered from the things they are supposed to represent. When a man speaks to another, it is so that he may be understood. The purpose of speech is that those sounds, as marks, may make his ideas known to the hearer. What words are the marks of, then,

are the ideas of the speaker. Nor can anyone apply them as marks immediately to anything other than the ideas he himself has. Otherwise he would be making them signs of his own conceptions and yet applying them to other ideas. That would make them signs of his ideas and not signs of his ideas at the same time, and so, in effect, give them no signification at all. Since words are voluntary signs, he cannot impose them as voluntary signs on things he does not know. That would make them signs of nothing, sounds without signification. A man cannot make his words the signs of qualities in things, or of conceptions in another person's mind, if he has no such ideas in his own. Until he has some ideas of his own, he cannot suppose them to correspond to another man's conceptions. Nor can he use any signs for them, for then they would be signs of he knows not what, which in truth is to be signs of nothing. He may represent other men's ideas to himself by some of his own, and agree to give them the same names other men do. But even then it is still his own ideas he gives those names to: ideas he has, not ideas he does not have.

3.2.3 This is so necessary in the use of language that in this respect the knowing and the ignorant, the learned and the unlearned, all use the words they speak (with any meaning) alike. In every man's mouth, words stand for the ideas he has and wants to express by them. Take a child who has noticed nothing in the metal he hears called gold except its bright, shining yellow color. He applies the word gold only to his own idea of that color and nothing else, and so he calls the same color in a peacock's tail gold. Another, who has observed better, adds great weight to shining yellow. Then the sound gold, when he uses it, stands for a complex idea of a shining yellow and very heavy substance. Another adds fusibility to those qualities, and then the word gold signifies to him a body that is bright, yellow, fusible, and very heavy. Another adds malleability. Each of these uses the word gold equally when he has occasion to express the idea he has applied it to. But it is evident that each can apply it

only to his own idea. He cannot make it stand as a sign of a complex idea he does not have.

3.2.4 *Words are often secretly referred, first, to the ideas in other men's minds.*—As men use words, they can properly and immediately signify nothing but the ideas in the speaker's mind. Yet in their thoughts men give them a secret reference to two other things.

First, they suppose their words to be marks of the ideas in the minds of the other men they communicate with as well. Otherwise they would talk in vain and could not be understood, because the sounds they applied to one idea would be applied by the hearer to another. That would be speaking two languages. But men do not usually stop to examine whether the idea they have in mind is the same as the idea of the people they are talking with. They think it enough that they use the word, as they imagine, in the common sense of that language. They suppose that the idea they make it a sign of is exactly the one to which the knowledgeable people of that country apply that name.

3.2.5 *Second, to the reality of things.*—Second, men do not want to be thought to be talking merely about their own imaginations. They want to be talking about things as they really are. So they often suppose their words to stand also for the reality of things. This second reference relates more particularly to substances and their names, as the first perhaps does to simple ideas and modes. So we will speak of these two different ways of applying words at greater length when we come to treat the names of mixed modes and of substances in particular. Still, allow me to say this here. Whenever we make words stand for anything but the ideas we have in our own minds, we pervert the use of words and bring unavoidable obscurity and confusion into their signification.

3.2.6 *Words by use readily call up ideas.*—There are further points to consider about words. The first is this. Words are immediately the signs of men's ideas, and so they are the instruments by which men communicate their conceptions and express to one another the thoughts and imaginations they have within their

own breasts. As a result, constant use creates such a connection between certain sounds and the ideas they stand for that hearing the names calls up certain ideas almost as readily as if the objects that tend to produce those ideas were actually affecting the senses. This is plainly so with all obvious sensible qualities, and with all substances we meet frequently and familiarly.

3.2.7 *Words are often used without signification.*—Second, the proper and immediate signification of words is ideas in the speaker's mind. But through familiar use from our cradles we learn certain articulate sounds very thoroughly. We have them ready on our tongues and always at hand in our memories, and yet we are not always careful to examine or settle their significations fully. So it often happens that men fix their thoughts more on words than on things, even when they mean to give a subject their careful attention. Indeed, many words are learned before the ideas they stand for are known. So some people, grown men as well as children, say a number of words no differently than parrots do, only because they have learned them and are used to those sounds. But insofar as words have use and signification, there is a constant connection between the sound and the idea, and an understanding that the one stands for the other. Without that application, words are nothing but so much meaningless noise.

3.2.8 *Their signification is perfectly arbitrary.*—As has been said, long and familiar use makes words call up certain ideas in men so constantly and readily that people are apt to suppose there is a natural connection between them. But words signify only each man's own ideas, and they do so by a perfectly arbitrary imposition. This is evident because they often fail to call up in others the same ideas we take them to be signs of, even in others who use the same language. And every man has so inviolable a liberty to make words stand for whatever ideas he pleases that no one has the power to make others have the same ideas in their minds that he has when they use the same words he does. That is why the great Augustus himself, while he held the power that ruled the world, admitted that he could not make a new

Latin word. In effect he was saying that he could not arbitrarily decide what idea any sound should be a sign of in the mouths and common language of his subjects.[1] It is true that in all languages common use, by tacit consent, assigns certain sounds to certain ideas. This limits the signification of a sound, so that a man who does not apply it to the same idea is not speaking properly. And let me add that a man is not speaking intelligibly unless his words call up in the hearer the same ideas he makes them stand for in speaking. A man may use words differently from their general meaning, or from the particular sense of the person he is addressing. Whatever the consequences of that, one thing is certain: their signification, in his use of them, is limited to his ideas, and they can be signs of nothing else.

GENERAL TERMS

Most words are general; abstraction makes general ideas, and genus and species are the mind's work.

3.3.1 *The greatest part of words are general.*—All things that exist are particulars. So it might seem reasonable that words, which ought to fit things, should be particular too (in their signification, I mean). Yet we find the very opposite. By far the greatest part of the words that make up all languages are general terms. This has not been the result of neglect or chance, but of reason and necessity.

3.3.2 *It is impossible for every particular thing to have a name.*—First, it is impossible for every particular thing to have its own distinct name. The signification and use of words depend on the connection the mind makes between its ideas and the sounds it uses as signs of them. So in applying names to things, the mind must have distinct ideas of the things. It must also retain the particular name that belongs to each one, as specifically assigned to that idea. But forming and retaining distinct ideas of all the particular things we meet is beyond the power of human

1 The story is usually told of Tiberius: the grammarian Marcellus told him he could grant citizenship to men but not to words (Suetonius, *On Grammarians* 22).

capacity. Even the most capacious understanding could not find room for every bird and beast men saw, and every tree and plant that affected their senses. Some generals have been able to call every soldier in their army by his own name, and people regard this as a sign of a prodigious memory. We can easily see, then, why men have never tried to give a name to each sheep in their flock, or to each crow that flies over their heads. Much less have they tried to give every leaf of a plant, or every grain of sand in their path, a name of its own.

3.3.3 *And useless.*—Second, even if it were possible, it would still be useless, because it would not serve the chief purpose of language. Men would pile up names of particular things in vain, since these names would not help them communicate their thoughts. Men learn names and use them in talking with others only in order to be understood. That happens only when, by use or consent, the sound I make with my organs of speech calls up in the hearer's mind the idea I apply it to in mine when I speak it. Names applied to particular things cannot do this. I alone would have the ideas of those things in my mind. So their names could not be meaningful or intelligible to anyone else who was not acquainted with all the very particular things that had come to my notice.

3.3.4 Third, suppose we grant that this too were feasible (which I think it is not). A distinct name for every particular thing would still be of little use for the improvement of knowledge. Knowledge is founded on particular things, but it enlarges itself through general views, and what properly serves those views is things reduced into sorts under general names. These sorts, with the names belonging to them, stay within some bounds. They do not multiply every moment beyond what the mind can hold or what use requires. So for the most part men have stopped at these. But this has not kept them from giving particular things names of their own where convenience demands it. So within their own species, which they have most to do with and in which they often have occasion to mention particular

persons, men use proper names, and distinct individuals have distinct names.

3.3.5 *What things have proper names.*—Besides persons, countries, cities, rivers, mountains, and other such divisions of place have usually been given their own names too, and for the same reason. Men often have occasion to mark them out particularly and, as it were, to set them before others when talking with them. I have no doubt that if we had reason to mention particular horses as often as we mention particular men, we would have proper names for the one as familiar as for the other. Bucephalus would then be a word as much in use as Alexander.[2] And so we see that among horse dealers, horses have their own names to be known and distinguished by, just as commonly as the dealers' servants do. This is because among them there is often occasion to mention this or that particular horse when he is out of sight.

3.3.6 *How general words are made.*—The next thing to consider is how general words come to be made. All things that exist are only particulars. So how do we come by general terms, and where do we find the general natures they are supposed to stand for? Words become general by being made the signs of general ideas. Ideas become general when we separate from them the circumstances of time and place, and any other ideas that may tie them to this or that particular existence. This kind of abstraction makes them capable of representing more than one individual. Each individual that conforms to the abstract idea is then, as we say, of that sort.

3.3.7 To work this out a little more distinctly, it may be worth tracing our notions and names from their beginning. We can observe by what degrees we proceed, and by what steps we enlarge our ideas, from our earliest infancy. Children will serve as the only example. Nothing is more evident than that their ideas of the people they deal with are only particular, like the people themselves. The ideas of the nurse and the mother are well formed in their minds, and like pictures of them there, they

2 Bucephalus was the famous horse of Alexander the Great.

represent only those individuals. The names children first give them are confined to these individuals. When the child uses the names nurse and mamma, they apply to those persons alone. Later, time and wider acquaintance make them notice that there are a great many other things in the world that resemble their father and mother and the people they are used to, in some common points of shape and several other qualities. They then form an idea that they find all those particulars share in, and they give that idea the name man, for example, as others do. So they come to have a general name and a general idea. In this they make nothing new. From the complex idea they had of Peter and James, Mary and Jane, they only leave out what is peculiar to each, and keep only what is common to them all.

3.3.8 They come by the general name and idea of man in this way, and in the same way they easily move on to more general names and notions. They observe that a number of things differ from their idea of man, and so cannot be included under that name, yet still have certain qualities in which they agree with man. By keeping only those qualities and uniting them into one idea, they once again have another, more general idea. When they have given it a name, they have made a term of wider extension. This new idea is made without any new addition. As before, it is made only by leaving out the shape and some other properties signified by the name man. What is kept is only a body with life, sense, and spontaneous motion, which is what the name animal covers.

3.3.9 *General natures are nothing but abstract ideas.*—This is the way men first formed general ideas, and general names for them. I think it is so evident that it needs no other proof than considering oneself or others and the ordinary workings of their minds in knowing. Some think general natures or notions are something other than such abstract and partial ideas of more complex ones, taken at first from particular existences. Anyone who thinks so will, I fear, be at a loss where to find them. Let anyone reflect, and then tell me how his idea of man differs from his ideas of Peter and Paul, or his idea of horse from his

idea of Bucephalus. It differs only by leaving out something peculiar to each individual, and keeping as much of those particular complex ideas of several particular existences as they are found to agree in. Take the complex ideas signified by the names man and horse. Leave out only the particulars in which they differ, and keep only those in which they agree. Make of these a new, distinct complex idea, and give it the name animal. One then has a more general term, which includes several other creatures along with man. Leave sense and spontaneous motion out of the idea of animal. The complex idea that remains, made up of the remaining simple ideas of body, life, and nourishment, becomes a more general one, under the more comprehensive term *vivens*. This point is so evident in itself that I will not dwell on it any longer. In the same way the mind proceeds to body, to substance, and finally to being, thing, and such universal terms, which stand for any of our ideas whatever. To conclude, this whole mystery of *genera* and *species*, which makes such a noise in the schools and is rightly so little regarded outside them, is nothing but abstract ideas, more or less comprehensive, with names attached to them.[3] In all of this one thing is constant and invariable. Every more general term stands for an idea that is only a part of any of the ideas contained under it.

3.3.10 *Why the genus is ordinarily used in definitions.*—This may show us why, when we define words, we use the genus, or the next general word that includes the one defined. (Defining a word is nothing but declaring its signification.) We do not do this out of necessity. We do it only to save the labor of listing the several simple ideas that the next general word, or genus, stands for, or perhaps sometimes to avoid the embarrassment of not being able to list them. Defining by *genus* and *differentia* (I ask leave to use these technical terms, though they are originally Latin, since they fit the notions they are applied to most properly)—defining by the genus, I say, is the shortest way. Yet I think it may be doubted whether it is the best. This much I am sure of:

3 *Vivens* is Latin for "living thing." "The schools" are the scholastic philosophy taught in the universities.

it is not the only way, and so it is not absolutely necessary. Definition is nothing but making someone else understand by words what idea the defined term stands for. So a definition is best made by listing the simple ideas that are combined in the signification of the term defined. Men have gotten used to using the next general term instead of such a list. They have done so not out of necessity or for greater clarity, but for the sake of speed and dispatch. Suppose someone wanted to know what idea the word man stood for, and he was told that man is a solid, extended substance, having life, sense, spontaneous motion, and the faculty of reasoning. I have no doubt that he would understand the meaning of the term man as well as if it were defined as a rational animal, and that the idea it stands for would be made known at least as clearly. Through the several definitions of animal, *vivens*, and *corpus*, that definition breaks down into these same listed ideas. In explaining the term man, I have followed here the ordinary definition of the schools. It is perhaps not the most exact, but it serves well enough for my present purpose.[4] This example shows what gave rise to the rule that a definition must consist of *genus* and *differentia*. It is also enough to show how little need there is for such a rule, and how little advantage there is in observing it strictly. As has been said, definitions only explain one word by several others, so that the meaning, or the idea it stands for, may be known with certainty. And languages are not always made so strictly by the rules of logic that every term can have its signification exactly and clearly expressed by two others. Experience amply convinces us of the contrary. Otherwise those who made this rule have done badly in giving us so few definitions that conform to it. But more on definitions in the next chapter.

3.3.11 *General and universal are creatures of the understanding.*—To return to general words: what has been said makes it plain that general and universal do not belong to the real existence of things. They are inventions and creatures of the understanding, made by it for its own use, and they concern only signs, whether

4 *Corpus* is Latin for "body."

words or ideas. As has been said, words are general when they are used as signs of general ideas, and so can be applied indifferently to many particular things. Ideas are general when they are set up as the representatives of many particular things. But universality does not belong to things themselves, which are all particular in their existence. This is true even of those words and ideas that are general in their signification. So when we set particulars aside, the generals that remain are only creatures of our own making. Their general nature is nothing but the capacity the understanding gives them to signify or represent many particulars. For the signification they have is nothing but a relation that the mind of man adds to them.

3.3.12 *Abstract ideas are the essences of the genera and species.*—The next thing to consider, then, is what kind of signification general words have. It is evident that they do not signify merely one particular thing, for then they would not be general terms but proper names. On the other side, it is just as evident that they do not signify a plurality. If they did, man and men would mean the same, and the distinction of numbers (as the grammarians call them) would be superfluous and useless. What general words signify, then, is a sort of things. Each of them does this by being a sign of an abstract idea in the mind. As existing things are found to agree with that idea, they come to be ranked under that name, or, what amounts to the same, to be of that sort. From this it is evident that the essences of the sorts of things are nothing but these abstract ideas. (If the Latin word is preferred, these are the essences of the species of things.) Having the essence of a species is what makes anything be of that species. Conformity to the idea the name is attached to is what gives a right to that name. So having the essence and having that conformity must be the same thing, since being of a species and having a right to the name of that species are one and the same. For example, to be a man, or of the species man, and to have a right to the name man, are the same thing. Again, to be a man, or of the species man, and to have the essence of a man, are the same thing. Now, nothing can be a man or have a right to the name man unless it

conforms to the abstract idea the name man stands for. And nothing can be a man or have a right to the species man unless it has the essence of that species. It follows that the abstract idea the name stands for and the essence of the species are one and the same. From this it is easy to see that the essences of the sorts of things, and consequently the sorting of things, are the workmanship of the understanding, which abstracts and makes those general ideas.

3.3.13 *They are the workmanship of the understanding, but have their foundation in the similarity of things.*—I would not want to be thought to forget here that nature makes many things alike when it produces them, much less to deny it. Nothing is more obvious, especially in the races of animals and in all things propagated by seed. Still, I think we may say that the sorting of them under names is the workmanship of the understanding. The understanding takes occasion from the similarity it observes among things to make abstract general ideas. It sets these up in the mind, with names attached, as patterns or forms (for the word form has a very proper signification in that sense). As particular existing things are found to agree with these patterns, they come to be of that species, have that name, or are put into that *classis*. When we say this is a man, that a horse; this is justice, that cruelty; this is a watch, that a jack, what else are we doing but ranking things under different specific names? We rank them as agreeing with the abstract ideas of which we have made those names the signs. And what are the essences of those species, marked out and labeled by names, but those abstract ideas in the mind? These ideas are, as it were, the bonds between the particular things that exist and the names they are to be ranked under.[5] When general names have any connection with particular beings, these abstract ideas are the medium that unites them. So the essences of species, as we distinguish and name them, neither are nor can be anything but the precise abstract ideas we have in our minds. Therefore the supposed real essences of substances, if they differ from our abstract

5 A jack here is a roasting jack, a mechanism for turning a spit.

ideas, cannot be the essences of the species we rank things into. For it would be as rational for two species to be one as for two different essences to be the essence of one species. And I ask what alterations may or may not happen in a horse or in lead without making either of them belong to another species. If we determine the species of things by our abstract ideas, this is easy to answer. But anyone who tries to settle it by supposed real essences will, I suppose, be at a loss. He will never be able to know exactly when anything ceases to be of the species horse or lead.

3.3.14 *Each distinct abstract idea is a distinct essence.*—I call these essences, or abstract ideas, the workmanship of the understanding. (They are the measures of names and the boundaries of species.) No one will be surprised at this if he considers that the complex ones, at least, are often different collections of simple ideas in different men. So what is covetousness to one man is not covetousness to another. Indeed, even in substances, where the abstract ideas seem to be taken from the things themselves, those ideas are not consistently the same. This holds even for the species most familiar to us, the one we are most intimately acquainted with. More than once it has been doubted whether a fetus born of a woman was a man. The doubt has gone so far that people have debated whether or not it should be nourished and baptized. That could not happen if nature made the abstract idea, or essence, to which the name man belongs. Instead, that idea is an uncertain and varying collection of simple ideas. The understanding puts it together, abstracts it, and then attaches a name to it. So in truth every distinct abstract idea is a distinct essence, and the names that stand for such distinct ideas are the names of things essentially different. Thus a circle is as essentially different from an oval as a sheep is from a goat, and rain is as essentially different from snow as water is from earth. For the abstract idea that is the essence of one cannot be shared with the other. So take any two abstract ideas that differ from each other in any part, and attach two distinct names to them. They constitute two distinct sorts, or, if you like, species, as essen-

tially different as the two most remote or opposite sorts in the world.

REAL AND NOMINAL ESSENCES

Locke separates the unknown real constitution of a thing from the abstract idea its general name stands for.

3.3.15 *Real and nominal essences.*—Some think (and not without reason) that the essences of things are wholly unknown. So it may be worth considering the several significations of the word essence.

First, essence may be taken for the very being of anything, by which it is what it is. In this sense we may call the real internal constitution of things their essence. Their discoverable qualities depend on this constitution, which in the case of substances is generally unknown. This is the proper, original signification of the word, as its formation makes evident: *essentia*, in its primary sense, properly signifies being. The word is still used in this sense when we speak of the essence of particular things without giving them any name.

Second, the learning and disputes of the schools have been so busy with genus and species that the word essence has almost lost its primary signification. Instead of the real constitution of things, it has been applied almost entirely to the artificial constitution of genus and species. It is true that people ordinarily suppose there is a real constitution of the sorts of things. And there is no doubt that there must be some real constitution on which any collection of coexisting simple ideas depends. But it is evident that things are ranked under names into sorts or species only as they agree with certain abstract ideas to which we have attached those names. So the essence of each genus or sort comes to be nothing but the abstract idea that the general or sortal name stands for. (I hope I may be allowed to call it sortal, from sort, as I call it general, from genus.) We will find that this is what the word essence means in its most familiar use. These

two sorts of essences may not unsuitably be called, I suppose, the one the real essence, the other the nominal essence.

3.3.16 *Constant connection between the name and the nominal essence.*—The connection between the nominal essence and the name is very close. The name of any sort of things cannot be given to any particular being unless it has this essence, by which it answers to the abstract idea of which that name is the sign.

3.3.17 *The supposition that species are distinguished by their real essences is useless.*—Concerning the real essences of corporeal substances (to mention only these), there are, if I am not mistaken, two opinions. The first is held by those who use the word essence for they know not what. They suppose a certain number of these essences, according to which all natural things are made. Each natural thing shares exactly in one of them, and so becomes of this or that species. The other, more rational opinion is held by those who regard all natural things as having a real but unknown constitution of their insensible parts. From this constitution flow the sensible qualities that serve us to distinguish things from one another, as we have occasion to rank them into sorts under common names. The first of these opinions supposes these essences to be a certain number of forms or molds, into which all existing natural things are cast and in which they equally share. I imagine it has greatly confused the knowledge of natural things. Births with severe malformations are frequently produced in every species of animal. Among human births there are severely intellectually disabled children and other strange outcomes. All these bring difficulties that cannot possibly be reconciled with this hypothesis. For it is as impossible that two things sharing exactly the same real essence should have different properties as that two figures sharing the same real essence of a circle should have different properties. But even if there were no other reason against it, this supposition would still fail. It supposes essences that cannot be known, and yet makes them what distinguishes the species of things. That is so wholly useless and unserviceable to any part of our

knowledge that this alone would be enough to make us set it aside. We should be content instead with such essences of the sorts or species of things as come within the reach of our knowledge. When seriously considered, these will be found, as I have said, to be nothing but the abstract complex ideas to which we have attached distinct general names.

3.3.18 *Real and nominal essence the same in simple ideas and modes, different in substances.*—Having distinguished essences in this way into nominal and real, we may further observe that in the species of simple ideas and modes the two are always the same, but in substances they are always quite different. Thus a figure enclosing a space between three lines is the real as well as the nominal essence of a triangle. It is not only the abstract idea to which the general name is attached. It is the very *essentia*, or being, of the thing itself: the foundation from which all its properties flow, and to which they are all inseparably attached. But it is quite otherwise with the parcel of matter that makes up the ring on my finger. There the two essences are evidently different. All the properties found in it, such as color, weight, fusibility, fixedness and the rest, depend on the real constitution of its insensible parts. We do not know that constitution, and since we have no particular idea of it, we have no name that is the sign of it. Yet it is its color, weight, fusibility, fixedness, and so on,[6] that make it gold, or give it a right to that name. These qualities are therefore its nominal essence, since nothing can be called gold unless its qualities conform to the abstract complex idea to which that name is attached. But since this distinction of essences belongs particularly to substances, we will have occasion to treat it more fully when we come to consider their names.

3.3.19 *Essences ingenerable and incorruptible.*—That such abstract ideas with their names are essences, in the sense we have been speaking of, appears further from what we are told about essences, namely, that they are all ingenerable and incorrupt-

6 "Fixedness": in the chemistry of the day, a substance's resistance to being dispersed or evaporated by fire.

ible. This cannot be true of the real constitutions of things, which begin and perish with them. Everything that exists, apart from its author, is liable to change. This is especially true of the things we are acquainted with and have ranked into bands under distinct names or ensigns. Thus what was grass today is tomorrow the flesh of a sheep, and a few days later becomes part of a man. In all these changes and others like them, it is evident that their real essence— that is, the constitution on which the properties of these various things depended—is destroyed and perishes with them. But if essences are taken to be ideas established in the mind, with names attached to them, they are supposed to remain steadily the same, whatever changes the particular substances undergo. Whatever becomes of Alexander and Bucephalus, the ideas to which the names man and horse are attached are still supposed to remain the same. And so the essences of those species are preserved whole and undestroyed, whatever changes happen to any or all of the individuals of those species. In this way the essence of a species remains safe and entire even if not a single individual of that kind exists. For even if there were now no circle existing anywhere in the world (as perhaps that figure is nowhere exactly traced out), the idea attached to that name would not cease to be what it is. Nor would it cease to serve as a pattern for deciding which of the particular figures we meet with have a right to the name circle and which do not. It would still show which of them, by having that essence, belonged to that species. Suppose there neither were nor had ever been in nature such a beast as a unicorn, or such a fish as a mermaid. Still, if those names stand for complex abstract ideas that contain no inconsistency, the essence of a mermaid is as intelligible as that of a man, and the idea of a unicorn is as certain, steady, and permanent as that of a horse. From what has been said, it is evident that the doctrine of the immutability of essences proves them to be nothing but abstract ideas. It is founded on the relation established between these ideas and certain sounds as their signs, and it will always

be true as long as the same name can have the same signification.

3.3.20 *Recapitulation.*—To conclude, this is what I would say in short. All the great business of genera and species and their essences amounts to no more than this: men make abstract ideas and settle them in their minds with names attached, and by doing so they enable themselves to consider things and talk about them in bundles, as it were. This lets them improve and communicate their knowledge more easily and readily. Their knowledge would advance only slowly if their words and thoughts were confined to particulars.

THE NAMES OF SIMPLE IDEAS

Names of simple ideas cannot be defined; the idea must come through the senses themselves.

3.4.1 *Names of simple ideas, modes, and substances, have each something peculiar.*—As I have shown, all words immediately signify nothing but the ideas in the mind of the speaker. Yet on a closer look we will find that the names of simple ideas, of mixed modes (under which I included relations too), and of natural substances each have something peculiar to them and different from the others. For example:

3.4.2 *First, names of simple ideas and substances intimate real existence.—First*, the names of simple ideas and of substances, along with the abstract ideas in the mind that they immediately signify, also point to some real existence from which their original pattern was derived. But the names of mixed modes end in the idea that is in the mind and lead our thoughts no further, as we will see at greater length in the following chapter.

3.4.3 *Secondly, names of simple ideas and modes signify always both real and nominal essence.—Secondly*, the names of simple ideas and modes always signify the real as well as the nominal essence of their species. But the names of natural substances rarely, if ever, signify anything but the bare nominal essences of

those species, as we will show in the chapter that deals specifically with the names of substances.

3.4.4 *Thirdly, names of simple ideas undefinable.—Thirdly*, the names of simple ideas cannot be defined; the names of all complex ideas can. As far as I know, nobody has yet pointed out which words can be defined and which cannot. The lack of this is, I am inclined to think, often the cause of great wrangling and obscurity in people's discussions. Some demand definitions of terms that cannot be defined. Others think they ought not to rest satisfied with an explanation given by a more general word and its restriction (or, in technical terms, by a genus and difference), even though, after a definition has been made in this way according to rule, those who hear it often have no clearer conception of the word's meaning than they had before. This much at least I think: showing which words can and which cannot be defined, and what a good definition consists in, is not wholly beside our present purpose. It may perhaps throw enough light on the nature of these signs, and of our ideas, to deserve closer consideration.

3.4.5 *If all were definable, it would be a process in infinitum.*—I will not trouble myself here to prove that not all terms are definable by pointing to the infinite regress we would plainly be led into if we allowed that all names could be defined. For if the terms of one definition always had to be defined by another, where would we finally stop? Instead I will show, from the nature of our ideas and the signification of our words, why some names can be defined and others cannot, and which ones they are.

3.4.6 *What a definition is.*—I think it is agreed that a definition is nothing but showing the meaning of one word by several other terms that are not synonymous with it. The meaning of words is only the ideas they are made to stand for by the person who uses them. So the meaning of a term is shown, or the word is defined, when other words represent the idea it signifies in the speaker's mind, or set that idea, as it were, before another person's view, and in this way pin down its signification. This is the only use

and purpose of definitions, and therefore the only measure of what is or is not a good definition.

3.4.7 *Simple ideas why undefinable.*—With this laid down, I say that the names of simple ideas, and only those, cannot be defined. The reason is this. The several terms of a definition signify several ideas, so taken together they can in no way represent an idea that has no composition at all. A definition is properly nothing but showing the meaning of one word by several others, each of which signifies something different, and so it can have no place in the names of simple ideas.

3.4.8 *Instances; motion.*—Because people have failed to notice this difference in our ideas and their names, the schools have produced that notable trifling which is so easy to see in the definitions they give us of a few of these simple ideas. Most of them even those masters of definition were obliged to leave untouched, simply because they found it impossible. What more exquisite jargon could human wit invent than this definition: "The act of a being in power, insofar as it is in power"? It would puzzle any rational man who did not already know it by its famous absurdity to guess what word it could ever be supposed to explain.[7] Suppose Cicero had asked a Dutchman what "*beweeginge*" was, and had received this explanation in his own language: that it was "*actus entis in potentia quatenus in potentia*." I ask whether anyone can imagine that this would have taught him what the word "*beweeginge*" signified. Could he have guessed what idea a Dutchman ordinarily had in his mind, and meant to convey to another, when he used that sound?[8]

3.4.9 Nor have the modern philosophers, who have tried to throw off the jargon of the schools and speak intelligibly, had much more success in defining simple ideas, whether by explaining their causes or in any other way. The atomists define motion as a passage from one place to another. What do they do

7 The scholastic rendering of Aristotle's definition of motion (*Physics* 3.1), "power" meaning potentiality.

8 Locke writes "Tully," the usual English name for Cicero then. *Beweeginge* is Dutch for "motion"; the Latin is the definition just quoted.

but put one synonymous word for another? For what is passage but motion? And if they were asked what passage was, how could they define it better than by motion? Is it not at least as proper and meaningful to say that passage is a motion from one place to another as to say that motion is a passage, and so on? When we exchange two words of the same signification for one another, we are translating, not defining. If one word is better understood than the other, this may help to reveal what idea the unknown one stands for. But it is very far from a definition, unless we are willing to say that every English word in the dictionary is the definition of the Latin word it corresponds to, and that motion is a definition of *motus*. The Cartesians give us the successive application of the parts of the surface of one body to those of another, and when properly examined this will not prove a much better definition of motion.

3.4.10 *Light.*—"The act of the transparent, insofar as it is transparent" is another Peripatetic definition of a simple idea. It is no more absurd than the earlier definition of motion, but it betrays its uselessness and emptiness more plainly. Experience will easily convince anyone that it cannot make a blind man understand the meaning of the word light, which it claims to define, in the least. The definition of motion does not seem so useless at first sight, because it escapes this kind of test. Since this simple idea enters by touch as well as by sight, it is impossible to point to anyone who has no way of getting the idea of motion except the bare definition of the name.[9] Those who tell us that light is a great number of little globules striking briskly on the back of the eye speak more intelligibly than the schools. Yet however well these words are understood, they would make the idea that the word light stands for no better known to a man who did not understand it before than if someone told him that light was nothing but a crowd of little tennis balls, which fairies hit with rackets all day long against some men's foreheads while passing others by. For even granting that this explanation of the thing is

9 Aristotle's definition of light (*De Anima* 2.7); "Peripatetic" means Aristotelian. Locke's word for "transparent" is "perspicuous."

true, the idea of the cause of light, however exact, would no more give us the idea of light itself, as it is a particular perception in us, than the idea of the shape and motion of a sharp piece of steel would give us the idea of the pain it can cause in us. In all the simple ideas of any one sense, the cause of a sensation and the sensation itself are two ideas, and they are so different and so distant from each other that no two ideas could be more so. And so, however long Descartes's globules struck on the *retina* of a man blinded by a *gutta serena*, he would never get from them any idea of light, or of anything like it, however well he understood what little globules were and what striking on another body was. That is why the Cartesians rightly distinguish between the light that causes that sensation in us and the idea that it produces in us, which is what is properly light.[10]

3.4.11 *Simple ideas, why undefinable, farther explained.*—Simple ideas, as has been shown, can only be got from the impressions that objects themselves make on our minds through the proper inlets appointed for each sort. If they are not received in this way, all the words in the world used to explain or define any of their names will never be able to produce in us the idea the name stands for. Words are sounds, and so they can produce in us no simple ideas except those of the very sounds themselves. They can excite no others except through the voluntary connection known to exist between them and the simple ideas that common use has made them signs of. Anyone who thinks otherwise should try whether any words can give him the taste of a pineapple and give him the true idea of the flavor of that celebrated, delicious fruit. He may be told that it resembles tastes whose ideas he already has in his memory, imprinted there by sensible objects familiar to his palate. To that extent he may approach that resemblance in his mind. But this is not giving us that idea by a definition. It is exciting other simple ideas in us by their known names, and these will still be very different from the true taste of the fruit itself. It is the same with light and colors and all other simple ideas, because the signification of

10 *Gutta serena*: an old term for blindness in which the eye itself looks normal.

sounds is not natural but only imposed and arbitrary. No definition of light or redness is better fitted or better able to produce either of those ideas in us than the sound light or red by itself. To hope to produce an idea of light or color by a sound, however it is formed, is to expect sounds to be visible or colors audible, and to make the ears do the work of all the other senses. That amounts to saying that we might taste, smell, and see with our ears. It is a philosophy worthy only of Sancho Panza, who had the ability to see Dulcinea by hearsay. Therefore anyone who has not first received into his mind, through the proper inlet, the simple idea a word stands for can never come to know the signification of that word by any other words or sounds whatever, however they are put together according to rules of definition.[11]

THE BLIND MAN AND SCARLET

A studious blind man decides scarlet is like a trumpet's sound; a painter wins a prize over a sculptor.

The only way is to present the proper object to his senses and so produce in him the idea whose name he has already learned. A studious blind man had racked his brains over visible objects and had used the explanations of his books and friends to understand the names of light and colors that often came his way. One day he boasted that he now understood what scarlet signified. When his friend asked him what scarlet was, the blind man answered that it was like the sound of a trumpet. Anyone who hopes to understand the name of any other simple idea only from a definition, or from other words used to explain it, will understand it in just this way.

3.4.12 *The contrary showed in complex ideas, by instances of a statue and rainbow.*—The case is quite different with complex ideas. They consist of several simple ones, and so words that stand for those simple ideas have the power to imprint on the mind com-

11 In Cervantes' *Don Quixote*, Sancho claims to have seen his master's lady Dulcinea, whom he knows only by report.

plex ideas that were never there before, and in this way to make their names understood. In such collections of ideas passing under one name, definition, meaning the teaching of the signification of one word by several others, has a place. It can make us understand the names of things that never came within reach of our senses, and form ideas matching those in other men's minds when they use those names. This holds provided that none of the terms of the definition stands for a simple idea that the person being taught has never yet had in his thoughts. Thus the word statue can be explained to a blind man by other words, but picture cannot. His senses have given him the idea of shape but not of colors, and so words cannot excite the ideas of colors in him. This is how the painter won the prize against the sculptor. Each was contending for the excellence of his own art. The sculptor boasted that his deserved preference because it reached further, since even those who had lost their eyes could still perceive its excellence. The painter agreed to submit to the judgment of a blind man. The blind man was brought to a place where there was a statue made by the one and a picture painted by the other. He was first led to the statue, where he traced with his hands all the features of the face and body, and with great admiration applauded the skill of the workman. Then he was led to the picture and his hands were laid on it. As his hands moved over the parts of the picture on the canvas, he was told that now he was touching the head, and then the forehead, the eyes, the nose, and so on, though he could not find the slightest difference anywhere. At this he cried out that it must certainly be a most admirable and divine piece of workmanship, since it could represent to them all those parts where he could neither feel nor perceive anything.

3.4.13 Suppose someone used the word rainbow to a person who knew all those colors but had never seen that phenomenon. By listing the shape, size, position, and order of the colors, he could define the word so well that it would be perfectly understood. Yet that definition, however exact and perfect, would never make a blind man understand it. Several of the simple ideas that

make up that complex one are ideas he never received by sensation and experience, and no words can excite them in his mind.

3.4.14 *The names of complex ideas when to be made intelligible by words.*—Simple ideas, as has been shown, can only be got by experience, from the objects suited to produce those perceptions in us. Once our minds have been stocked with them in this way and we know their names, we are in a position to define the names of the complex ideas made up of them, and to understand those names by definition. But when a term stands for a simple idea that a man has never yet had in his mind, it is impossible to make its meaning known to him by any words. Sometimes a term stands for an idea a man is acquainted with, but he does not know that the term is its sign. Then another name for the same idea, one he is used to, may make him understand its meaning. But in no case whatever can any name of a simple idea be defined.

3.4.15 *Fourthly, names of simple ideas least doubtful.—Fourthly*, the names of simple ideas lack the help of definition to fix their signification. Even so, they are generally less doubtful and uncertain than the names of mixed modes and substances. Because they stand for only one simple perception, men for the most part agree easily and perfectly on their signification, and there is little room for mistakes and wrangling about their meaning. Once a man knows that whiteness is the name of the color he has observed in snow or milk, he will not be likely to misapply that word as long as he retains that idea. And if he has lost the idea altogether, he is not likely to mistake the word's meaning; he simply sees that he does not understand it. In simple ideas there is no multiplicity of simple ideas to be put together, which is what makes the names of mixed modes doubtful. Nor is there a supposed but unknown real essence, with properties depending on it whose precise number is also unknown, which is what causes the difficulty in the names of substances. On the contrary, in simple ideas the whole signification of the name is known at once. It does not consist of parts, where putting in

more or fewer might vary the idea and so make the signification of the name obscure and uncertain.

3.4.16 *Fifthly, simple ideas have few ascents in linea prædicamentali.* —*Fifthly*, it may further be observed about simple ideas and their names that they have only a few steps of ascent in the *linea prædicamentali* (as it is called), from the lowest species to the *summum genus*. The reason is that the lowest species is only one simple idea, so nothing can be left out of it. We cannot take away the difference so that it agrees with some other thing in one idea common to both, an idea which, having one name, would be the genus of the other two.[12] For example, nothing can be left out of the ideas of white and red that would make them agree in one common appearance and so have one general name. Compare the complex idea of man: leaving rationality out of it makes it agree with brute in the more general idea and name of animal. So when men wanted to avoid tedious lists and include white and red and several other such simple ideas under one general name, they have had to do it by a word that indicates only the way these ideas get into the mind. When white, red, and yellow are all included under the genus or name color, it signifies nothing more than such ideas as are produced in the mind only by sight and enter only through the eyes. And when they wanted to form a still more general term, to include both colors and sounds and similar simple ideas, they did it by a word signifying all those ideas that come into the mind by only one sense. So the general term quality, in its ordinary sense, includes colors, sounds, tastes, smells, and tangible qualities. It excludes extension, number, motion, pleasure, and pain, which make impressions on the mind and bring in their ideas through more than one sense.

3.4.17 *Sixthly, names of simple ideas stand for ideas, not at all arbitrary.—Sixthly*, the names of simple ideas, substances, and mixed modes also differ in this. The names of mixed modes stand for ideas that are perfectly arbitrary. The names of substances are

12 *Linea prædicamentali*: the scholastic "line of predication," the ladder from the lowest species up to the *summum genus*, the highest genus.

not perfectly so, but refer to a pattern, though with some latitude. The names of simple ideas are taken wholly from the existence of things and are not arbitrary at all. We will see in the following chapters what difference this makes in the significations of their names.

The names of simple modes differ little from those of simple ideas.

THE NAMES OF MIXED MODES AND RELATIONS

The mind makes mixed modes freely, without patterns in nature, and the name ties each combination together.

3.5.1 *They stand for abstract ideas, as well as other general names.*—Since the names of mixed modes are general, they stand, as has been shown, for sorts or species of things, each of which has its own essence. The essences of these species, too, as has been shown, are nothing but the abstract ideas in the mind to which the name is attached. So far the names and essences of mixed modes have only what they share with other ideas. But if we look at them a little more closely, we will find that they have something peculiar that may deserve our attention.

3.5.2 *First, the ideas they stand for are made by the understanding.*—The first peculiarity I will point out in them is that the abstract ideas, or if you like the essences, of the various species of mixed modes are made by the understanding. In this they differ from those of simple ideas. With simple ideas the mind has no power to make any at all. It only receives those that the real existence of things presents to it by acting on it.

3.5.3 *Secondly, made arbitrarily, and without patterns.*—Next, these essences of the species of mixed modes are not only made by the mind but made very arbitrarily, without patterns or reference to any real existence. In this they differ from those of substances, which carry with them the supposition of some real being from which they are taken and to which they conform. In its complex ideas of mixed modes, however, the mind takes the liberty of not following the existence of things exactly. It unites

and retains certain collections as so many distinct specific ideas. Meanwhile others, which occur just as often in nature and are just as plainly suggested by outward things, are passed over without particular names or specifications. Nor, in the case of mixed modes, does the mind examine its ideas against the real existence of things, as it does with its complex ideas of substances, or verify them against patterns that contain such particular combinations in nature. To know whether his idea of adultery or incest is right, will a man look for it anywhere among existing things? Or is it true because someone has witnessed such an action? No. It is enough here that men have put together such a collection into one complex idea. That collection is the archetype and specific idea, whether or not any such action was ever actually committed in the world (*in rerum natura*).

3.5.4 *How this is done.*—To understand this properly, we must consider what this making of complex ideas consists in. It does not consist in making any new idea, but in putting together ideas the mind already had. In doing so the mind does three things. First, it chooses a certain number of ideas. Second, it connects them and makes them into one idea. Third, it ties them together with a name. If we examine how the mind proceeds in these, and what liberty it takes in them, we will easily see that these essences of the species of mixed modes are the workmanship of the mind, and consequently that the species themselves are of men's making.

3.5.5 *Evidently arbitrary, in that the idea is often before the existence.*—These ideas of mixed modes are made by a voluntary collection of ideas put together in the mind, independently of any original patterns in nature. No one can doubt this who only reflects that this sort of complex idea can be made, abstracted, and given a name, and a species thus constituted, before a single individual of that species ever existed. Who can doubt that the ideas of sacrilege or adultery could have been formed in men's minds and given names, so that these species of mixed modes were constituted, before either act had ever been committed?

And who can doubt that, while they had no being except in the understanding, they could have been discussed and reasoned about, and certain truths discovered about them, just as well as now, when they all too often have a real existence? This makes plain how far the sorts of mixed modes are creatures of the understanding. There they have a being that serves all the purposes of real truth and knowledge as well as when they really exist. And we cannot doubt that lawmakers have often made laws about species of actions that were only creatures of their own understandings, beings with no existence except in their own minds. And I think no one can deny that the resurrection was a species of mixed modes in the mind before it really existed.

3.5.6 *Instances; murder, incest, stabbing.*—To see how arbitrarily the mind makes these essences of mixed modes, we need only look at almost any of them. A little examination will satisfy us that it is the mind that combines several scattered, independent ideas into one complex one. By the common name it gives them, the mind makes them the essence of a certain species, without being guided by any connection they have in nature. Is the idea of a man connected with killing in nature any more closely than the idea of a sheep is? Yet killing a man is made a particular species of action, signified by the word murder, and killing a sheep is not. Or is there any more union in nature between the idea of the relation of a father and killing than between that of a son or a neighbor and killing? Yet the first are combined into one complex idea, and so made the essence of the distinct species parricide, while the others make no distinct species at all. And although they have made killing one's father or mother a species distinct from killing one's son or daughter, in some other cases son and daughter are included too, just as father and mother are, and they are all equally comprehended in the same species. Incest is an example. Thus in mixed modes the mind arbitrarily unites into complex ideas whatever combinations it finds convenient. Others, which have just as much union in nature, are left loose and never combined into one idea, because there is no

need for one name for them. It is evident, then, that the mind by its free choice connects a certain number of ideas that in nature have no more union with each other than others it leaves out. Why else is attention paid to the part of the weapon with which the wound is begun, to make the distinct species called stabbing, while the shape and material of the weapon are left out? I do not say this is done without reason, as we will see more fully shortly. What I do say is that it is done by the free choice of the mind pursuing its own ends, and that these species of mixed modes are therefore the workmanship of the understanding. Nothing is more evident than that, for the most part, in forming these ideas the mind does not look for its patterns in nature or refer the ideas it makes to the real existence of things. It puts together whatever may best serve its own purposes, without tying itself to the precise limits of anything that really exists.

3.5.7 *But still subservient to the end of language.*—These complex ideas, or essences of mixed modes, depend on the mind and are made by it with great liberty. Still, they are not made at random and jumbled together without any reason at all. Though they are not always copied from nature, they are always suited to the purpose for which abstract ideas are made. They are combinations of ideas that are loose enough, with as little union among themselves as many others that the mind never connects into one idea. Yet they are always made for the convenience of communication, which is the chief end of language. The use of language is to signify general conceptions easily and quickly by short sounds. Such a conception may contain not only a great many particulars but also a great variety of independent ideas collected into one complex idea. In making the species of mixed modes, therefore, men have paid attention only to the combinations they had occasion to mention to one another. These they have combined into distinct complex ideas and given names to, while others that are just as closely united in nature are left loose and disregarded. To go no further than human actions themselves: if men were to make distinct abstract ideas of all the varieties that might be observed in them, the number would be

infinite, and memory would be confounded by the abundance and overloaded to little purpose. It is enough for men to make and name as many complex ideas of these mixed modes as they find they need names for in the ordinary course of their affairs. They may join the idea of father or mother to the idea of killing, and so make a species distinct from killing one's son or neighbor. If they do, it is because the crime differs in heinousness, and because murdering one's father or mother deserves a distinct punishment, different from the one that ought to be inflicted for murdering a son or a neighbor. So they find it necessary to refer to it by a distinct name, and that is the purpose of making that distinct combination. With respect to the idea of killing, the ideas of mother and daughter are treated very differently. The first is joined with it to make a distinct abstract idea with a name, and so a distinct species, and the second is not. Yet with respect to sexual relations, both are included under incest. This is done for the same convenience: to express under one name, and to count as one species, those impure unions that have a particular depravity beyond others, and so to avoid roundabout phrases and tedious descriptions.

WORDS THAT CANNOT BE TRANSLATED

Words peculiar to one language, and even hour, foot and pound, show species are made for communication.

3.5.8 *The untranslatable words of various languages are a proof of this.* —A moderate skill in different languages will easily convince anyone of the truth of this, since it is so easy to notice a great many words in one language that have no counterpart in another. This plainly shows that the people of one country, through their customs and way of life, have found reason to make various complex ideas and give them names, which others never gathered into specific ideas. This could not have happened if these species were the steady workmanship of nature, and not collections made and abstracted by the mind for the purpose of naming and for the convenience of communica-

tion. The terms of our law, which are not empty sounds, will hardly find words to match them in Spanish or Italian, which are not meager languages. Much less, I think, could anyone translate them into the Carib or Westo languages. And the Versura of the Romans, or the Corban of the Jews, have no words in other languages to match them. The reason for this is plain from what has been said.[13] Indeed, suppose we look a little more closely into this matter and compare different languages exactly. We shall find that they have words that translations and dictionaries treat as equivalent. Yet among the names of complex ideas, especially of mixed modes, hardly one in ten stands for exactly the same idea as the word it is rendered by in the dictionaries. No ideas are more common, or less compounded, than the measures of time, extension, and weight. The Latin names *hora, pes, libra* are rendered without difficulty by the English names hour, foot, and pound. Yet nothing is more evident than that the ideas a Roman attached to these Latin names were very different from those an Englishman expresses by the English ones. And if either of them were to use the measures that speakers of the other language designated by their names, his reckoning would be quite wrong. These proofs are too tangible to be doubted. We shall find this much more so in the names of more abstract and compounded ideas, which make up the greatest part of moral discourse. When people compare these names carefully with those they are translated into in other languages, they will find that very few of them correspond exactly across the whole range of their meanings.

3.5.9 *This shows that species are made for communication.*—I take such particular notice of this so that we may not be mistaken about genera and species and their essences. We should not treat them as if they were things regularly and constantly made by nature and had a real existence in things. On a more careful survey they turn out to be nothing but a device of the under-

13 Carib: a language of the Caribbean; Westo: a Native American people of the Carolina region. *Versura* was the Roman practice of borrowing to pay off a debt; *corban* is a Hebrew term for something dedicated to God as an offering (cf. Mark 7:11).

standing. The understanding uses one general term to signify more easily a collection of ideas it often has occasion to communicate. Under that term various particulars could be included, insofar as they agreed with that abstract idea. The word "species" has an ambiguous meaning, and that may make it sound harsh to some when I say the species of mixed modes are made by the understanding. Still, I think nobody can deny that it is the mind that makes the abstract complex ideas to which specific names are given. And if it is true, as it is, that the mind makes the patterns for sorting and naming things, I leave it to be considered who makes the boundaries of the sort or species. For to me, species and sort differ only as a Latin and an English idiom do.

3.5.10 *In mixed modes it is the name that ties the combination together and makes it a species.*—The close relation between species, essences, and their general names, at least in mixed modes, will appear further when we consider that it is the name that seems to preserve those essences and give them their lasting duration. The mind makes the connection between the loose parts of those complex ideas, and this union has no particular foundation in nature. So it would dissolve again if something did not, so to speak, hold it together and keep the parts from scattering. So although it is the mind that makes the collection, it is the name that is, so to speak, the knot that ties them tightly together. What a vast variety of different ideas the word *triumphus* holds together and delivers to us as one species! If this name had never been made, or had been entirely lost, we could no doubt have had descriptions of what went on in that ceremony. But still, I think, what holds those different parts together in the unity of one complex idea is that very word attached to it. Without it, the various parts would no more be thought to make one thing than any other show that had been put on only once and so never united into one complex idea under one name. In mixed modes, then, the unity that any essence requires depends heavily on the mind, and the continuation and fixing of that unity depends heavily on the name in common use attached to

it. I leave it to those who regard essences and species as real, established things in nature to consider how far this is so.

3.5.11 Consistent with this, we find that when people speak of mixed modes, they seldom imagine or accept any species of them except those marked out by a name. These species are of human making only, for the purpose of naming. So no such species is noticed or supposed to exist unless a name is attached to it, as the sign that someone has combined several loose ideas into one idea. By that name the parts are given a lasting union. Otherwise they would lose it as soon as the mind set that abstract idea aside and stopped actually thinking about it. But once a name is attached to it, the parts of that complex idea have a settled and permanent union in that name. Then the essence is, so to speak, established, and the species regarded as complete. For why would the memory burden itself with such compositions, unless it were to make them general by abstraction? And why make them general, unless so that they might have general names, for the convenience of discourse and communication? So we see that killing a man with a sword and killing him with a hatchet are not regarded as distinct species of action. But if the point of the sword enters the body first, it counts as a distinct species where it has a distinct name. So it does in England, whose language calls it stabbing. In another country, where it has not happened to be marked out by a name of its own, it does not count as a distinct species. The species of corporeal substances are different. There too it is the mind that makes the nominal essence. But the ideas combined in it are supposed to have a union in nature, whether the mind joins them or not. So those species are regarded as distinct without any operation of the mind, either abstracting or giving a name to that complex idea.

3.5.12 *For the origins of mixed modes we look no further than the mind, which also shows them to be the workmanship of the understanding.*—We have said that the essences of the species of mixed modes are the creatures of the understanding rather than the works of nature. Consistent with this, I say, we find that their

names lead our thoughts to the mind and no further. When we speak of justice or gratitude, we form no image of anything existing that we mean to conceive. Our thoughts end in the abstract ideas of those virtues and look no further. It is otherwise when we speak of a horse or iron. We consider their specific ideas not as merely in the mind but as in the things themselves, which supply the original patterns of those ideas. But in mixed modes—at least in the most important part of them, which are moral beings—we consider the original patterns as being in the mind. It is to those that we refer when we distinguish particular beings under names. And this, I think, is why these essences of the species of mixed modes are given the more particular name of notions, as belonging by a special right to the understanding.

3.5.13 *Their being made by the understanding without patterns shows why they are so compounded.*—From this we can also learn why the complex ideas of mixed modes are commonly more compounded and decompounded than those of natural substances. They are the workmanship of the understanding, which pursues only its own ends and the convenience of expressing briefly the ideas it wants to make known to another. So it very freely unites in one abstract idea things that in their nature have no coherence. Under one term it bundles together a great variety of compounded and decompounded ideas. Take the name procession: what a great mixture of independent ideas it contains in that one complex idea—persons, vestments, candles, ranks, motions, sounds—which the human mind has arbitrarily put together to express by that one name! The complex ideas of the sorts of substances, by contrast, are usually made up of only a small number of simple ones. In the species of animals, these two, namely shape and voice, commonly make up the whole nominal essence.

3.5.14 *Names of mixed modes always stand for their real essences.*—Another thing we may observe from what has been said is that the names of mixed modes signify (when they have any determinate meaning) the real essences of their species. These abstract

ideas are the workmanship of the mind and are not referred to the real existence of things. So there is no supposition that the name signifies anything more than just the complex idea the mind itself has formed. That is all the mind meant to express by it. And it is that on which all the properties of the species depend and from which alone they all flow. So in these the real and the nominal essence are the same. How much this matters to certain knowledge of general truths we shall see later.

3.5.15 *Why their names are usually acquired before their ideas.*—This may also show us why, for the most part, the names of mixed modes are acquired before the ideas they stand for are fully known. No species of these is ordinarily noticed except those that have names. And those species, or rather their essences, are abstract complex ideas made arbitrarily by the mind. So it is convenient, if not necessary, to know the names before trying to form these complex ideas. Otherwise a person fills his head with a crowd of abstract complex ideas for which others have no names. He can do nothing with them except set them aside and forget them again. I admit that at the beginning of languages it was necessary to have the idea before giving it a name. It is still so when someone makes a new complex idea and, by giving it a new name, makes a new word as well. But this does not concern languages already made. These have generally provided pretty well for the ideas people frequently need to have and communicate. And in such languages, I ask, is it not the usual course for children to learn the names of mixed modes before they have their ideas? Which one in a thousand ever forms the abstract ideas of glory and ambition before he has heard their names? With simple ideas and substances, I grant, it is otherwise. These are ideas that have a real existence and union in nature, so the ideas and the names are acquired, one before the other, as it happens.

3.5.16 *Why I have been so long on this subject.*—What has been said here about mixed modes applies, with very little difference, to relations as well. Everyone can see this for himself, so I may spare myself the trouble of enlarging on it. This is all the more

true because some may think that what I have said here about words in this third book is much more than so slight a subject required. I grant it could have been put more briefly. But I wanted to keep my reader on a subject that seems to me new and a little out of the way (I am sure it is one I did not think of when I began to write). I hoped that by searching it to the bottom and turning it over on every side, some part or other would meet everyone's thoughts. It might then prompt even the most reluctant or careless to reflect on a general failing which, though of great consequence, is little noticed. Consider what a fuss is made about essences. Consider too how much every sort of knowledge, discourse, and conversation is plagued and thrown into disorder by the careless and confused use and application of words. It will perhaps then be thought worthwhile to expose the matter thoroughly. And I shall be forgiven for dwelling long on a subject which, I think, needs to be pressed home for this reason: the faults people usually commit here are the greatest obstacles to true knowledge, and yet they are so well thought of that they pass for knowledge. People would often see how small a scrap of reason and truth is mixed in with the blustering opinions they are puffed up with—or possibly none at all. They need only look beyond fashionable sounds and observe what ideas are or are not contained in their words. They are armed at every point with these words, and they lay about them with them so confidently. I shall think I have done some service to truth, peace, and learning if, by enlarging on this subject, I can make people reflect on their own use of language. I want to give them reason to suspect that it often happens to others to have very good and approved words in their mouths and writings with very uncertain, little, or no meaning. So it may sometimes happen to them too. It is therefore not unreasonable for them to be careful about this themselves, and not to be unwilling to have their words examined by others. With this aim, then, I shall go on with what more I have to say on this matter.

THE NAMES OF SUBSTANCES

Names of substances stand for sorts fixed by nominal essences, not by the real essences we do not know.

3.6.1 *The common names of substances stand for sorts.*—The common names of substances, like other general terms, stand for sorts. That is nothing but their being made signs of complex ideas in which several particular substances agree or might agree. By virtue of those ideas they can be included in one common conception and signified by one name. I say "do or might agree." There is only one sun existing in the world. Yet its idea is abstracted so that more substances (if there were several) could each agree with it. So it is as much a sort as if there were as many suns as there are stars. Some people think there are many suns, and that each fixed star would answer to the idea the name sun stands for, to someone placed at the right distance. They do not lack reasons. This, incidentally, may show us how much the sorts of things depend on the collections of ideas people have made, and not on the real nature of things. Call them, if you prefer, the genera and species of things; those Latin terms mean no more to me than the English word sort. It is not impossible that, speaking properly, what is a sun to one person might be a star to another.

3.6.2 *The essence of each sort is the abstract idea.*—Each sort or species has a measure and boundary that make it that particular sort and distinguish it from others. This is what we call its essence. It is nothing but the abstract idea to which the name is attached, so that everything contained in that idea is essential to that sort. This is all the essence of natural substances that we know, or by which we distinguish them into sorts. Still, I call it by a special name, the nominal essence. I do so to distinguish it from the real constitution of substances, on which this nominal essence and all the properties of that sort depend. That constitution, therefore, as has been said, may be called the real essence. For example, the nominal essence of gold is the complex idea

the word gold stands for—say, a body that is yellow, of a certain weight, malleable, fusible, and fixed. But the real essence is the constitution of the insensible parts of that body, on which those qualities and all the other properties of gold depend. How different these two are, though both are called essence, is obvious at first sight.

3.6.3 *The nominal and real essence are different.*—Perhaps voluntary motion, with sense and reason, joined to a body of a certain shape, is the complex idea to which I and others attach the name man. If so, it is the nominal essence of the species so called. Yet nobody will say that this complex idea is the real essence and source of all the operations to be found in any individual of that sort. The foundation of all the qualities that are the ingredients of our complex idea is something quite different. His faculties of moving, sensation, and reasoning and his other powers flow from a certain constitution of man, and his so regular shape depends on it. Angels possibly know that constitution, and his Maker certainly does. If we knew it as they do, we should have a quite different idea of his essence from the one now contained in our definition of that species, whatever that definition may be. And our idea of any individual man would be as different from what it is now as the idea of someone who knows all the springs and wheels and other internal mechanisms of the famous clock at Strasbourg differs from that of a gaping countryman. The countryman merely sees the motion of the hand, hears the clock strike, and observes only some of its outward appearances.[14]

3.6.4 *Nothing is essential to individuals.*—In the ordinary use of the word, essence relates to sorts. It is considered in particular beings only insofar as they are ranked into sorts. This is clear from the following. Take away the abstract ideas by which we sort individuals and rank them under common names, and the thought of anything essential to any of them instantly vanishes. We have no notion of the one without the other, which plainly

14 The astronomical clock of Strasbourg Cathedral, completed in 1574, was one of the mechanical wonders of Europe.

shows their relation. It is necessary for me to be as I am; God and nature have made me so. But nothing I have is essential to me. An accident or disease may greatly alter my color or shape. A fever or a fall may take away my reason or memory, or both, and a stroke may leave me neither sense nor understanding—no, nor life. Other creatures of my shape may be made with more and better, or fewer and worse, faculties than I have. Others may have reason and sense in a shape and body very different from mine. None of these is essential to the one or the other, or to any individual whatever, until the mind refers it to some sort or species of things. Then at once, according to the abstract idea of that sort, something is found to be essential. Let anyone examine his own thoughts. He will find that as soon as he supposes or speaks of something essential, the thought of some species comes into his mind, or of the complex idea signified by some general name. It is with reference to that that this or that quality is said to be essential. So if I am asked whether it is essential to me, or to any other particular corporeal being, to have reason, I say no. It is no more essential than it is to this white thing I am writing on to have words on it. But if that particular being is to be counted as of the sort man, and to be given the name man, then reason is essential to it, supposing reason is part of the complex idea the name man stands for. In the same way, it is essential to this thing I am writing on to contain words, if I give it the name treatise and rank it under that species. So essential and not essential relate only to our abstract ideas and the names attached to them. That amounts to no more than this. Some general term stands for an abstract idea, which contains certain qualities. Any particular thing without those qualities cannot be ranked under that species or called by that name, since that abstract idea is the very essence of that species.

3.6.5 Thus if the idea of body, for some people, is bare extension or space, then solidity is not essential to body. If others take the idea they call body to consist of solidity and extension, then solidity is essential to body. So only what forms part of the complex idea that the name of a sort stands for is considered essen-

tial. Without it, no particular thing can be counted as of that sort or be entitled to that name. Suppose a lump of matter were found that had all the other qualities of iron but lacked obedience to the lodestone: it would neither be drawn by it nor take direction from it. Would anyone ask whether it lacked anything essential? It would be absurd to ask whether a thing really existing lacked anything essential to it. Or could it be asked whether this made an essential or specific difference? We have no other measure of essential or specific than our abstract ideas. And to talk of specific differences in nature without reference to general ideas and names is to talk unintelligibly. For I would ask anyone what is enough to make an essential difference in nature between any two particular beings, without regard to some abstract idea that is taken as the essence and standard of a species. Set all such patterns and standards entirely aside. Then particular beings, considered merely in themselves, will be found to have all their qualities equally essential. Everything in each individual will be essential to it—or rather, nothing at all will be. For it may be reasonable to ask whether obeying the magnet is essential to iron. But I think it very improper and meaningless to ask whether it is essential to the particular lump of matter I cut my pen with, if I do not consider it under the name iron or as being of a certain species. And if, as has been said, our abstract ideas that have names attached to them are the boundaries of species, nothing can be essential except what is contained in those ideas.

3.6.6 It is true that I have often mentioned a real essence in substances, distinct from the abstract ideas of them that I call their nominal essence. By this real essence I mean the real constitution of any thing that is the foundation of all the properties combined in the nominal essence and constantly found to coexist with it. It is the particular constitution which every thing has within itself, without any relation to anything outside it. But essence, even in this sense, relates to a sort and presupposes a species. It is the real constitution on which the properties depend. So it necessarily presupposes a sort of things, since

properties belong only to species and not to individuals. For example, suppose the nominal essence of gold is a body of a certain distinctive color and weight, with malleability and fusibility. Then the real essence is the constitution of the parts of matter on which these qualities and their union depend. It is also the foundation of gold's solubility in aqua regia and of the other properties that accompany that complex idea. Here there are essences and properties, but all on the supposition of a sort, or general abstract idea, which is considered unchangeable. But there is no individual lump of matter to which any of these qualities is so attached as to be essential to it or inseparable from it. What is essential belongs to it as a condition by which it is of this or that sort. But stop considering it as ranked under the name of some abstract idea, and then nothing is necessary to it, nothing inseparable from it. Indeed, as for the real essences of substances, we only suppose that they exist, without knowing exactly what they are. What always connects them to the species is the nominal essence, and they are the supposed foundation and cause of that nominal essence.

3.6.7 *The nominal essence bounds the species.*—The next thing to consider is which of these essences sorts substances into sorts or species. It is evidently the nominal essence. For the name is the mark of the sort, and the nominal essence alone is what the name signifies. So nothing can determine the sorts of things we rank under general names except the idea that the name is designed to mark. As has been shown, this is what we call the nominal essence. Why do we say this is a horse and that a mule, this is an animal and that a plant? How does any particular thing come to be of this or that sort, except because it has that nominal essence? Or, what comes to the same thing, because it agrees with the abstract idea that name is attached to? When anyone hears or speaks any of these or other names of substances, I ask him only to reflect on his own thoughts, and so find out what sort of essences they stand for.

3.6.8 The species of things, to us, are nothing but our ranking them under distinct names according to the complex ideas in

us, and not according to precise, distinct, real essences in them. This is plain from the following. Many individuals are ranked in one sort, called by one common name, and so accepted as being of one species. Yet they still have qualities, depending on their real constitutions, as different from one another as from things considered to differ from them in species. This is easy for anyone who deals with natural bodies to observe. But chemists especially are often convinced of it by bitter experience. They look, sometimes in vain, for the same qualities in one sample of sulfur, antimony, or vitriol that they have found in others. For these are bodies of the same species, having the same nominal essence under the same name. Yet under rigorous testing they often reveal qualities so different from one another as to defeat the expectations and labor of very careful chemists. But suppose things were divided into species according to their real essences. Then it would be as impossible to find different properties in any two individual substances of the same species as it is to find different properties in two circles or two equilateral triangles. For us, the essence proper is what places each particular in this or that *classis*—or, what is the same thing, under this or that general name. And what can that be but the abstract idea to which that name is attached? So it really refers not so much to the being of particular things as to their general names.

3.6.9 *Not the real essence, which we do not know.*—Nor indeed can we rank and sort things by their real essences, because we do not know them. Consequently we cannot name them by those essences either, and naming is the purpose of sorting. Our faculties take us no further toward the knowledge and distinction of substances than a collection of the sensible ideas we observe in them. We may make this collection with all the care and exactness we are capable of. Even so, it is further from the true internal constitution from which those qualities flow than, as I said, a countryman's idea is from the inner mechanism of that famous clock at Strasbourg, of which he sees only the outward shape and motions. There is no plant or animal so insignificant that it does not baffle the broadest understanding. Our familiar-

ity with the things around us takes away our wonder, but it does not cure our ignorance. When we come to examine the stones we walk on, or the iron we handle every day, we immediately find that we do not know how they are made. We can give no reason for the different qualities we find in them. It is evident that the internal constitution on which their properties depend is unknown to us. To go no further than the crudest and most obvious qualities we can think of among them: what is that texture of parts, that real essence, that makes lead and antimony fusible, and wood and stones not? What makes lead and iron malleable, and antimony and stones not? And yet everyone knows how infinitely these fall short of the fine contrivances and inconceivable real essences of plants or animals. Consider the workmanship of the all-wise and all-powerful God in the great fabric of the universe and every part of it. It exceeds the capacity and comprehension of the most inquisitive and intelligent man by more than the best contrivance of the most ingenious man exceeds the conceptions of the most ignorant of rational creatures. So it is in vain that we claim to arrange things into sorts and distribute them into definite classes under names by their real essences, which are so far beyond our discovery or comprehension. A blind man could just as soon sort things by their colors, and a man who has lost his sense of smell could just as well distinguish a lily from a rose by their scents, as anyone could sort things by internal constitutions he does not know. Anyone who thinks he can distinguish sheep and goats by their real essences, which are unknown to him, is welcome to try his skill on the species called cassowary and querechinchio. Let him determine the boundaries of those species by their internal real essences, without knowing the complex idea of sensible qualities that each of those names stands for in the countries where those animals are found.[15]

3.6.10 *Not substantial forms, which we know even less.*—Some have been taught that the various species of substances had their own

15 The querechinchio is an animal named in a travel account and not securely identified.

distinct, internal, substantial forms, and that these forms divided substances into their true species and genera. These people were led still further astray by setting their minds on fruitless inquiries after substantial forms. These forms are wholly unintelligible, and we have hardly even an obscure or confused general conception of them.

SPIRITS AND THE SCALE OF BEINGS

Our ideas of spirits come from reflection, and species of creatures probably ascend above us by gentle degrees.

3.6.11 *That the nominal essence is what we distinguish species by is further evident from spirits.*—We rank and distinguish natural substances into species by the nominal essences the mind makes, not by real essences found in the things themselves. This is further evident from our ideas of spirits. The mind gets the simple ideas it attributes to spirits only by reflecting on its own operations. So it has, and can have, no other notion of spirit than by attributing all the operations it finds in itself to a sort of beings, without regard to matter. Even the most advanced notion we have of God works the same way. We have got certain simple ideas from reflecting on what we find in ourselves, and we conceive them to carry more perfection with them than their absence would. Our notion of God is only these simple ideas attributed to him, I say, in an unlimited degree. Thus from reflection on ourselves we have got the ideas of existence, knowledge, power, and pleasure. We find it better to have each of them than to lack it, and the more of each the better. Joining them all together, with infinity added to each, we have the complex idea of an eternal, omniscient, omnipotent, infinitely wise and happy Being. We are told that there are different species of angels, yet we do not know how to form distinct specific ideas of them. This is not from any belief that it is impossible for more than one species of spirits to exist. It is because we have no more simple ideas applicable to such beings (nor can we form any more) than the few taken from ourselves. These come from

the actions of our own minds in thinking, being delighted, and moving various parts of our bodies. So we can distinguish the various species of spirits from one another in our conceptions only by attributing to them, in a higher or lower degree, the operations and powers we find in ourselves. And so we have no very distinct specific ideas of spirits, except only of God. To him we attribute duration and all those other ideas with infinity; to the other spirits, with limitation. Nor, as I humbly suppose, do our ideas distinguish God from them by any set of simple ideas that we have of one and not of the other. They distinguish them only by infinity. All the particular ideas of existence, knowledge, will, power, motion, and so on, are ideas derived from the operations of our minds, and we attribute all of them to all sorts of spirits. They differ only in degree, up to the utmost we can imagine—even infinity—when we try to frame, as well as we can, an idea of the first being. Yet it is certain that he is infinitely further removed, in the real excellence of his nature, from the highest and most perfect of all created beings than the greatest man, or even the purest seraph, is from the most contemptible bit of matter. Consequently he must infinitely exceed what our narrow understandings can conceive of him.

3.6.12 *Of which there are probably countless species.*—It is not impossible to conceive, nor contrary to reason, that there may be many species of spirits. They may be as separated and as varied from one another by distinct properties of which we have no ideas as the species of sensible things are by qualities we know and observe in them. That there should be more species of intelligent creatures above us than there are of sensible and material ones below us seems probable to me for this reason: in all the visible corporeal world we see no chasms or gaps. All the way down from us, the descent is by easy steps, a continuous series of things that differ very little from one another at each remove. There are fish that have wings and are no strangers to the air. And there are some birds that live in the water, whose blood is as cold as a fish's and whose flesh tastes so much like fish that

the scrupulous are allowed to eat them on fish-days.[16] There are animals so closely related to both birds and beasts that they stand midway between the two. Amphibious animals link the land-dwellers and the water-dwellers together. Seals live on land and at sea, and porpoises have the warm blood and entrails of a hog, not to mention what is confidently reported of mermaids or sea-men. There are some brutes that seem to have as much knowledge and reason as some that are called men. And the animal and vegetable kingdoms are so closely joined that if you take the lowest of the one and the highest of the other, you will hardly see any great difference between them. And so on down, until we come to the lowest and most inorganic parts of matter: everywhere we will find that the several species are linked together and differ only by almost imperceptible degrees. And when we consider the infinite power and wisdom of the Maker, we have reason to think that it suits the magnificent harmony of the universe, and the great design and infinite goodness of the Architect, that the species of creatures should also rise by gentle degrees upward from us toward his infinite perfection, just as we see them gradually descend downward from us. If that is probable, then we have reason to be persuaded that there are far more species of creatures above us than there are beneath us. For in degrees of perfection we are much further from the infinite being of God than we are from the lowest state of being, the one that comes nearest to nothing. And yet, for the reasons given above, we have no clear, distinct ideas of any of those distinct species.

3.6.13 *The nominal essence is that of the species, as shown from water and ice.*—But to return to the species of corporeal substances. If I asked anyone whether ice and water were two distinct species of things, I have no doubt I would be told yes. And it cannot be denied that someone who says they are two distinct species is right. But suppose an Englishman brought up in Jamaica, who had perhaps never seen or heard of ice, comes to England in the winter. He finds the water he put in his basin at night largely

16 Fish-days: days of fasting on which the Church forbade meat but allowed fish.

frozen in the morning and, not knowing any special name for it, calls it hardened water. I ask: would this not be a new species to him, different from water? And I think the answer here would be that it would not be a new species to him. It would be no more a new species than jelly set by the cold is a distinct species from the same jelly when warm and fluid, or than liquid gold in the furnace is a distinct species from hard gold in a workman's hands. And if this is so, it is plain that our distinct species are nothing but distinct complex ideas with distinct names attached to them. It is true that every substance that exists has its own particular constitution, on which the sensible qualities and powers we observe in it depend. But the ranking of things into species, which is nothing but sorting them under various titles, is done by us according to the ideas we have of them. Those ideas are enough to distinguish things by names, so that we can talk about them when they are not present before us. But we will be liable to great mistakes if we suppose that the sorting is done by their real internal constitutions, and that existing things are divided by nature into species by real essences in the same way that we divide them into species by names.

3.6.14 *Difficulties against a fixed number of real essences.*—The usual supposition is that there are certain precise essences or forms of things, by which nature divides all existing individuals into species. To distinguish substantial beings into species on that supposition, the following things are necessary.

3.6.15 First, we would need to be sure that nature, in producing things, always intends them to share in certain regulated, established essences, which are to be the models of everything produced. In the crude sense in which this is usually put forward, it would need some better explanation before it could be wholly assented to.

3.6.16 Second, we would need to know whether nature always achieves the essence it intends in producing things. The irregular and malformed births that have been observed in various sorts of animals will always give us reason to doubt one or both of these points.

3.6.17 Third, it ought to be settled whether such malformed births are really a distinct species, according to the scholastic notion of the word species. For it is certain that everything that exists has its particular constitution. And yet we find that some of these malformed births have few or none of the qualities that are supposed to result from and accompany the essence of the species they come from, and to which they seem to belong by descent.

3.6.18 *Our nominal essences of substances are not perfect collections of properties.*—Fourth, the real essences of the things we distinguish into species, and name as so distinguished, would have to be known; that is, we would have to have ideas of them. But since we are ignorant on these four points, the supposed real essences of things are of no use to us in distinguishing substances into species.

3.6.19 Fifth, the only help imaginable in this case would be this: having framed perfect complex ideas of the properties of things that flow from their different real essences, we could use them to distinguish things into species. But this cannot be done either. We are ignorant of the real essence itself, so it is impossible to know all the properties that flow from it and are tied to it so closely that, if any one of them is missing, we may conclude with certainty that the essence is not there, and so the thing is not of that species. Take the real essence of gold. Some properties depend on it in such a way that if any one of them failed, the real essence of gold, and consequently gold, would not be there. We can never know the precise number of those properties unless we know the real essence of gold itself and fix that species by it. By the word gold here I must be understood to mean a particular piece of matter, for example the last guinea that was minted. For suppose it stood here in its ordinary meaning, for the complex idea that I or anyone else calls gold, that is,[17] for the nominal essence of gold. Then it would be jargon. That is how hard it is to show the various meanings and the imperfection of words when we have nothing but words to do it with.

17 The guinea was an English gold coin, first struck in 1663.

3.6.20 From all this it is clear that our distinguishing substances into species by names is not founded on their real essences at all. Nor can we claim to arrange and sort them exactly into species according to internal essential differences.

3.6.21 *But such a collection as our name stands for.*—As has been remarked, we need general words even though we do not know the real essences of things. So all we can do is collect as many simple ideas as we find, on examination, to be united together in existing things, and make one complex idea out of them. This is not the real essence of any existing substance. Yet it is the specific essence to which our name belongs, and it is convertible with that name. By this we can at least test the truth of these nominal essences. For example, some say that the essence of body is extension. If that is so, we can never go wrong in putting the essence of anything for the thing itself. So in discourse let us put extension for body. When we want to say that body moves, let us say that extension moves, and see how bad it looks. Anyone who said that one extension moves another extension by impulse would show the absurdity of such a notion by the mere expression. The essence of anything, as far as we are concerned, is the whole complex idea that its name covers and marks. In substances, besides the various distinct simple ideas that make them up, the confused idea of substance, that is, of an unknown support and cause of their union, is always a part. So the essence of body is not bare extension but an extended solid thing. To say that an extended solid thing moves or impels another is therefore the same as saying that body moves or impels, and just as intelligible. Likewise, to say that a rational animal is capable of conversation is the same as saying that a man is. But no one will say that rationality is capable of conversation, because rationality does not make up the whole essence to which we give the name man.

WHAT COUNTS AS A MAN

Hairy creatures, drills and malformed births show that the boundaries of the species man are set by our ideas.

3.6.22 *Our abstract ideas are for us the measures of species: the example of man.*—There are creatures in the world that have shapes like ours but are hairy and lack language and reason. There are intellectually disabled people among us who have exactly our shape but lack reason, and some of them lack language too. There are creatures, it is said, that have language and reason and a shape agreeing with ours in other respects, but have hairy tails. There are others where the males have no beards, and others where the females do. ("Sit fides penes auctorem": the teller must vouch for it, though there seems to be no contradiction in there being such creatures.) Suppose it is asked whether these are all men or not, whether they are all of the human species. It is plain that the question concerns only the nominal essence. Those creatures that fit the definition of the word man, or the complex idea signified by that name, are men, and the others are not. But the inquiry may instead be about the supposed real essence, and whether the internal constitution and structure of these various creatures differ in species. Then it is wholly impossible for us to answer, since no part of that goes into our specific idea. We have reason only to think that where the faculties or outward structure differ so much, the internal constitution is not exactly the same. But our measures of species are only our abstract ideas, which we know, and not that internal constitution, which makes no part of them. As long as that is so, it is pointless to ask what difference in the internal real constitution makes a difference of species. Take a severely intellectually disabled child and a drill, which agree in shape and in the lack of reason and speech. Shall a mere difference of hair on the skin be a mark of a different internal specific constitution between them? And shall the lack of reason and speech not be a sign to us of different real constitutions and species between such a child and a reasonable man?

[18] And the same goes for the rest, if we claim that the distinction of species or sorts is fixed by the real structure and secret constitutions of things.

3.6.23 *Species are not distinguished by generation.*—Nor let anyone say that the power of propagation keeps the supposed real species distinct and intact, in animals by the union of male and female and in plants by seeds. For even granting this is true, it would help us in distinguishing the species of things no further than the tribes of animals and plants. What are we to do for the rest? But even with animals and plants it is not enough. If the histories do not lie, women have conceived by drills, and it would be a new question what real species such an offspring would be in nature, by that measure. We have reason to think this is not impossible, since mules and jumarts are so common in the world: mules come from the mating of a donkey and a mare, and jumarts from that of a bull and a mare. I once saw a creature that was the offspring of a cat and a rat and plainly bore the marks of both. In it nature seemed to have followed the pattern of neither sort alone but to have jumbled the two together.[19] Anyone who adds to this the malformed births so often met with in nature will find it hard, even among animals, to determine by pedigree what species every animal's offspring belongs to. He will be at a loss about the real essence, which he thinks is certainly passed on by generation and which alone has a right to the specific name. What is more, if the species of animals and plants are to be distinguished only by propagation, must I go to the Indies to see the sire and dam of the one, and the plant from which the seed was gathered that produced the other, in order to know whether this is a tiger or that is tea?

3.6.24 *Not by substantial forms.*—On the whole, then, it is evident that men make their own collections of sensible qualities into the essences of their various sorts of substances. Most men pay

18 Locke's word is "changeling" (in folklore, a child left by fairies in place of a stolen one). A "drill" is his name for a large ape or baboon.

19 The jumart, a supposed cross of bull and horse, was widely believed in; no such hybrid exists.

no attention to the real internal structures of those substances in sorting them. Much less did anyone ever think of substantial forms, except those in this one part of the world who have learned the language of the schools. Then there are the ignorant men who claim no insight into real essences and do not trouble themselves about substantial forms, but are content to tell things apart by their sensible qualities. These men are often better acquainted with the differences between things than those learned, sharp-sighted men who look so deep into them and talk so confidently of something more hidden and essential. They can distinguish things more finely by their uses and know better what to expect from each.

3.6.25 *The specific essences are made by the mind.*—But suppose the real essences of substances could be discovered by those who applied themselves rigorously to that inquiry. We still could not reasonably think that the ranking of things under general names was governed by those internal real constitutions, or by anything but their obvious appearances. For in every country, languages were established long before sciences. So it was not philosophers, or logicians, or people who troubled themselves about forms and essences, who made the general names in use among the various nations of mankind. For the most part, in all languages, those more or less comprehensive terms got their birth and meaning from ignorant and unlettered people. These people sorted and named things by the sensible qualities they found in them, so as to signify them to others when they were absent, whether they had occasion to mention a sort or a particular thing.

3.6.26 *Therefore very various and uncertain.*—It is evident, then, that we sort and name substances by their nominal essences and not by their real ones. The next thing to consider is how, and by whom, these essences come to be made. As to who makes them, it is evident that they are made by the mind and not by nature. If they were nature's workmanship, they could not vary as much from one person to another as experience tells us they do. If we examine it, we will not find the nominal

essence of any one species of substances to be the same in all men. It differs even for the species we are more intimately acquainted with than any other. If it were of nature's making, the abstract idea to which the name man is given could not possibly differ from one person to another, so that for one it is "animal rationale" and for another "animal implume bipes latis unguibus." Someone who attaches the name man to a complex idea made up of sense and spontaneous motion, joined to a body of a certain shape, has one essence of the species man. Someone who, on further examination, adds rationality has another essence of the species he calls man. By this means the same individual will be a true man to the one and not to the other.[20] I think hardly anyone will accept this upright figure, familiar as it is, as the essential difference of the species man. And yet it is very evident how far people decide the sorts of animals by their shape rather than their descent. More than once it has been debated whether certain human fetuses should be kept alive, or received for baptism, or not. The only reason was that their outward form differed from the ordinary build of children, and no one knew whether they were less capable of reason than infants cast in another mold. Some of those infants, though of an approved shape, never show in all their lives as much appearance of reason as is found in an ape or an elephant, and never give any sign of being moved by a rational soul. From this it is evident that the outward figure, which was the only thing found wanting, was made essential to the human species. The faculty of reason was not, and nobody could know whether it would be wanting when its time came. On such occasions the learned theologian or lawyer must give up his sacred definition of "animal rationale" and substitute some other essence of the human species. Monsieur Ménage gives us an example worth noticing here: "When the abbot of St. Martin was born," he says, "he had so little of the figure of a man that he looked like a mal-

20 "Rational animal"; and "featherless two-legged animal with broad nails," the Platonic definition as supposedly amended after Diogenes produced a plucked chicken.

formed birth rather than a child. For some time it was debated whether he should be baptized or not.[21] However, he was baptized and declared a man provisionally [until time should show what he would turn out to be]. Nature had molded him so awkwardly that all his life he was called the Abbot Malotru, that is, ill-shaped. He was from Caen." *Menagiana*, 278/430. This child, we see, came very close to being excluded from the human species merely because of his shape. He escaped very narrowly as it was. A figure a little more oddly formed would certainly have sunk him, and he would have been put to death as a thing that could not be allowed to pass for a man. And yet no reason can be given why a rational soul could not have been lodged in him if the features of his face had been a little altered. He was disfigured as he was, and yet his soul and abilities made him fit to be a dignitary in the church. Why could a somewhat longer face, or a flatter nose, or a wider mouth not have been consistent with such a soul and such abilities, just as the rest of his ill figure was?

3.6.27 Where, then, I would gladly know, do the precise and immovable boundaries of that species lie? It is plain, if we examine it, that nature has made no such thing and established none among men. It is evident that we do not know the real essence of that or of any other sort of substance. So we are very unsettled in our nominal essences, which we make ourselves. If several people were asked, as soon as some oddly shaped fetus was born, whether it was a man or not, we would no doubt get different answers. This could not happen if our nominal essences, by which we limit and distinguish the species of substances, were exact copies of precise boundaries set by nature, by which she divided all substances into certain species. It happens because men make these nominal essences with some freedom. Licetus mentions a malformed birth with a man's head and a hog's body (book 1, chapter 3). Who would undertake to settle what species it belonged to? Or those others which had the heads of beasts,

21 Gilles Ménage (1613–1692), French scholar. The *Menagiana* (1693) is a collection of his table talk.

such as dogs and horses, on human bodies? If any of these creatures had lived and been able to speak, the difficulty would have been greater. Suppose the upper part, down to the middle, had been of human shape, and everything below it swine. Would it have been murder to destroy it? Or would the bishop have had to be consulted about whether it was man enough to be admitted to the font? I have been told that this happened in France some years ago, in a somewhat similar case.[22] That is how uncertain the boundaries of the species of animals are to us, since we have no other measures than the complex ideas we ourselves collect. And that is how far we are from knowing with certainty what a man is, though perhaps it will be judged great ignorance to have any doubt about it. Yet I think I may say that the definite boundaries of that species are far from being determined. The precise number of simple ideas that make up its nominal essence is far from being settled and perfectly known. So very serious doubts may still arise about it. And I imagine that none of the definitions of the word man we have so far, nor any descriptions of that sort of animal, are perfect and exact enough to satisfy a thoughtful, inquiring person. Much less are they exact enough to win general agreement and to be what people everywhere would hold to in deciding cases about births that might occur, and in settling life or death, baptism or no baptism.

3.6.28 *But not so arbitrary as mixed modes.*—Although these nominal essences of substances are made by the mind, they are not made as arbitrarily as those of mixed modes. To make any nominal essence, two things are necessary. First, the ideas it consists of must be united so as to make only one idea, however compounded. Second, the particular idea so united must be exactly the same, neither more nor less. For if two abstract complex ideas differ either in the number or in the sorts of their component parts, they make two different essences, not one and the same. In the first of these, the mind, in making its complex ideas

22 Fortunio Liceti (1577–1657), Italian physician, author of a treatise on malformed births, *De monstrorum causis, natura et differentiis* (1616).

of substances, simply follows nature. It puts none together that are not supposed to be united in nature. Nobody joins the voice of a sheep to the shape of a horse, or the color of lead to the weight and fixedness of gold, to make the complex ideas of any real substances, unless he wants to fill his head with chimeras and his discourse with unintelligible words. Men observed certain qualities always joined and existing together, and in this they copied nature: they made their complex ideas of substances out of ideas so united. People may make whatever complex ideas they please and give them whatever names they like. But if they want to be understood when they speak of things that really exist, they must to some degree conform their ideas to the things they mean to speak of. Otherwise their language will be like that of Babel. If the ideas their words stand for do not somehow answer to the common appearances and agreement of substances as they really exist, every man's words will be intelligible only to himself. They will no longer serve for conversation and the ordinary affairs of life.

3.6.29 *Though very imperfect.*—Second, the human mind, in making its complex ideas of substances, never puts any ideas together that do not really coexist or are not supposed to, and so it truly borrows that union from nature. Yet how many ideas it combines depends on the care, industry, or fancy of the person who makes it, and these vary. People generally content themselves with a few obvious sensible qualities. Often, if not always, they leave out others that are as important, and as firmly united, as the ones they take. There are two sorts of sensible substances. One sort is organized bodies, which are propagated by seed. In these, the shape is for us the leading quality and the most characteristic part, the one that determines the species. So in plants and animals an extended solid substance of a certain figure usually serves the purpose. Some people seem to prize their definition, "animal rationale." Yet if a creature were found that had language and reason but did not share the usual shape of a man, I believe it would hardly pass for a man, however much it was an "animal rationale." And if Balaam's ass had talked all his life

as rationally as he did once with his master, I still doubt whether anyone would have thought him worthy of the name man, or allowed him to be of the same species as himself. In plants and animals it is the shape we fix on. In most other bodies, which are not propagated by seed, it is the color we mostly fix on and are most guided by.[23] Thus where we find the color of gold, we are apt to imagine that all the other qualities in our complex idea are there too. And we commonly take these two obvious qualities, namely shape and color, as such strong presumptive ideas of various species that in a good picture we readily say, this is a lion and that a rose; this is a gold goblet and that a silver one. We say it merely from the different figures and colors that the brush presents to the eye.

3.6.30 *Which still serve for ordinary conversation.*—This serves well enough for rough and confused conceptions and for loose ways of talking and thinking. But people are still far from having agreed on the precise number of simple ideas, or qualities, that belong to any sort of thing signified by its name. Nor is that surprising. It takes much time, effort, and skill, strict inquiry and long examination, to find out which simple ideas, and how many, are constantly and inseparably united in nature and always to be found together in the same subject. Most people lack the time, the inclination, or the industry for this, even to a tolerable degree. They content themselves with a few obvious outward appearances of things, so as to distinguish and sort them readily for the ordinary affairs of life. And so, without further examination, they give them names or take up the names already in use. In ordinary conversation these names pass well enough as signs of a few obvious coexisting qualities. But they are far from covering, with a settled meaning, a precise number of simple ideas, much less all those that are united in nature. There has been so much fuss about genus and species, and so much talk of specific differences. Anyone who considers how few words we yet have settled definitions for may reasonably suppose that those forms about which so much noise has been

23 Balaam's ass rebukes its master in Numbers 22:28–30.

made are only chimeras, which give us no light into the specific natures of things. And anyone who considers how far the names of substances are from having meanings that everyone who uses them agrees on will have reason to conclude something further. The nominal essences of substances are all supposed to be copied from nature, yet all or most of them are very imperfect, since the composition of those complex ideas differs greatly from person to person. So these boundaries of species are as men make them, not as nature does, if indeed there are any such preset bounds in nature at all. It is true that nature has made many particular substances so that they agree with and resemble one another, and so provide a basis for ranking them into sorts. But we sort things, or make determinate species, in order to name them and comprehend them under general terms. So I cannot see how it can properly be said that nature sets the boundaries of the species of things. Or if it does, our boundaries of species do not exactly match those in nature. We need general names for present use, so we do not wait for a complete discovery of all the qualities that would best show us their most important differences and agreements. Instead we ourselves divide things into species by certain obvious appearances, so that we can more easily communicate our thoughts about them under general names. We have no knowledge of any substance except the simple ideas that are united in it. We observe various particular things agreeing with others in several of those simple ideas. So we make that collection our specific idea and give it a general name. That way, in recording our own thoughts and in our discourse with others, we can designate in one short word all the individuals that agree in that complex idea, without listing the simple ideas that make it up. And so we do not waste our time and breath on tedious descriptions, as we see those people forced to do who want to talk about some new sort of thing they do not yet have a name for.

3.6.31 *The essences of species under the same name are very different.* —However well these species of substances serve in ordinary conversation, it is plain that different people make this complex

idea very differently. This is the idea in which they observe several individuals to agree, and some make it more accurately and others less. In some it contains a greater number of qualities, in others a smaller. So it is evidently whatever the mind makes it. For children, the yellow shining color makes gold. Others add weight, malleability, and fusibility. Others add still other qualities, which they find joined to that yellow color as constantly as its weight and fusibility. For among all these and similar qualities, any one has as good a right as any other to be put into the complex idea of the substance in which they are all joined. So different people leave out or put in various simple ideas that others do not, depending on how far they have examined the subject, their skill, and what they have observed of it. In this way they have different essences of gold, which must therefore be of their own making, not nature's.

3.6.32 *The more general our ideas are, the more incomplete and partial they are.*—The number of simple ideas that make up the nominal essence of the lowest species, or first sorting of individuals, depends on the human mind collecting them in various ways. If that is so, it is even more evident that the same holds for the more comprehensive classes, which the masters of logic call genera. These are complex ideas made imperfect by design. It is visible at first sight that many of the qualities found in the things themselves are purposely left out of generic ideas. The mind makes general ideas covering several particulars by leaving out time and place, and anything else that would make them incommunicable to more than one individual. In the same way, to make still more general ideas that can cover different sorts, it leaves out the qualities that distinguish those sorts, and puts into its new collection only ideas that are common to several sorts. The same convenience that led people to express various lots of yellow matter coming from Guinea and Peru under one name also sets them to making one name that can cover gold and silver and some other bodies of different sorts. This is done by leaving out the qualities peculiar to each sort and keeping a complex idea made up of those common to them all. When the

name metal is attached to this idea, a genus is constituted. Its essence is that abstract idea, which contains only malleability and fusibility with certain degrees of weight and fixedness, in which some bodies of various kinds agree. It leaves out the color and the other qualities peculiar to gold and silver and the other sorts included under the name metal. From this it is plain that people do not exactly follow the patterns nature sets them when they make their general ideas of substances. For no body is to be found that has just malleability and fusibility in it, without other qualities as inseparable as those. But in making their general ideas, people have kept their eye more on the convenience of language and on quick dispatch by short and comprehensive signs than on the true and precise nature of things as they exist. So in framing their abstract ideas, their chief aim has been to supply themselves with a stock of general names that cover more or fewer things. So in this whole business of genera and species, the genus, or more comprehensive class, is only a partial conception of what is in the species. The species, in turn, is only a partial idea of what is to be found in each individual. So if anyone thinks that a man, a horse, an animal, a plant, and so on are distinguished by real essences made by nature, he must think nature very generous with these real essences. She must make one for body, another for an animal, and another for a horse, and bestow all these essences generously on Bucephalus. But if we rightly considered what is done in all these genera and species, or sorts, we would find that nothing new is made. There are only more or less comprehensive signs, by which we can express in a few syllables great numbers of particular things, as they agree in more or less general conceptions that we have framed for that purpose. In all of this we may observe that the more general term is always the name of a less complex idea, and that each genus is only a partial conception of the species included under it. So if these abstract general ideas are thought to be complete, it can only be with respect to a certain established relation between them and certain names used to signify

them. It cannot be with respect to anything existing as nature made it.

3.6.33 *All this suited to the purpose of speech.*—This is adjusted to the true end of speech, which is to be the easiest and shortest way of communicating our notions. In this way, someone who wanted to talk about things insofar as they agreed in the complex ideas of extension and solidity needed only to use the word body to denote them all. Someone who wanted to join other ideas to these, signified by the words life, sense, and spontaneous motion, needed only to use the word animal to signify everything that shared those ideas. And someone who had made a complex idea of a body with life, sense, and motion, together with the faculty of reasoning and a certain shape, needed only to use the short monosyllable man to express all the particulars that correspond to that complex idea. This is the proper business of genus and species. And people do this without any consideration of real essences or substantial forms. These do not come within the reach of our knowledge when we think of those things, nor within the meaning of our words when we talk with others.

3.6.34 *Instance in cassowaries.*—Suppose I were to talk with someone about a sort of bird I recently saw in St James's Park. It stood about three or four feet high, with a covering of something between feathers and hair, dark brown in color. It had no wings, but in their place two or three little branches hanging down like sprigs of Spanish broom. It had long, large legs, feet with only three claws, and no tail. I would have to give this description of it, and in that way I might make others understand me. But when I am told that its name is cassowary, I may then use that word in discourse to stand for the whole complex idea given in that description. Yet by that word, which has now become a specific name, I know no more of the real essence or constitution of that sort of animal than I did before. And before I learned the name I probably knew as much about the nature of that species of bird as many Englishmen know about swans or

herons. Those are specific names, very well known, of sorts of birds common in England.

3.6.35 *Men determine the sorts.*—From what has been said, it is evident that men make sorts of things. Since it is different essences alone that make different species, it is plain that those who make the abstract ideas, which are the nominal essences, thereby make the species, or sort. Suppose a body were found that had all the other qualities of gold except malleability. It would no doubt become a question whether it was gold or not, that is, whether it was of that species. This could be settled only by the abstract idea to which each person attached the name gold. Someone who did not include malleability in his nominal essence, signified by the sound gold, would count it true gold and of that species. On the other hand, someone who included malleability in his specific idea would not count it true gold, or of that species. And who, I ask, makes these different species, even under one and the same name, but men who make two different abstract ideas that do not consist of exactly the same collection of qualities? Nor is it a mere supposition to imagine that a body may exist in which the other obvious qualities of gold are present without malleability. It is certain that gold itself is sometimes so "eager" (as craftsmen call it) that it will stand the hammer no better than glass itself.[24] What we have said about putting malleability into, or leaving it out of, the complex idea to which someone attaches the name gold may be said of its distinctive weight, its fixedness, and several other similar qualities. Whatever is left out or put in, it is still the complex idea to which that name is attached that makes the species. Insofar as any particular parcel of matter answers to that idea, the name of the sort truly belongs to it, and it is of that species. This is how anything is true gold, perfect metal. It is plain that this whole determination of the species depends on the human understanding, which makes this or that complex idea.

3.6.36 *Nature makes the similitude.*—In short, then, the case is this. Nature makes many particular things that agree with one

24 "Eager" was a metalworkers' term for brittle metal.

another in many sensible qualities, and probably also in their internal frame and constitution. But it is not this real essence that distinguishes them into species. It is men who do that. They take their cue from the qualities they find united in things, in which they often observe several individuals to agree, and they range them into sorts for the purpose of naming them, for the convenience of comprehensive signs. Individuals then come to be ranked under these signs as under regimental flags, according to their conformity to this or that abstract idea. So this one belongs to the blue regiment, that one to the red; this is a man, that a drill. And in this, I think, consists the whole business of genus and species.

3.6.37 I do not deny that nature, in its constant production of particular beings, does not always make them new and various, but very much alike and akin to one another. But I think it is nonetheless true that the boundaries of the species by which men sort them are made by men. As has been proved, the essences of the species distinguished by different names are of man's making, and they are seldom adequate to the internal nature of the things they are taken from. So we may truly say that this way of sorting things is the workmanship of men.

3.6.38 *Each abstract idea is an essence.*—One thing in this doctrine will, I do not doubt, seem very strange. It follows from what has been said that each abstract idea with a name attached makes a distinct species. But who can help it, if truth will have it so? So it must remain until somebody can show us that the species of things are limited and distinguished by something else, and let us see that general terms signify not our abstract ideas but something different from them. I would very much like to know why a shock dog and a hound are not as distinct species as a spaniel and an elephant.[25] We have no other idea of the different essence of an elephant and a spaniel than we have of the different essence of a shock dog and a hound. All the essential difference by which we know them and distinguish them from one

25 A shock, or shock dog, was a small, shaggy-haired lapdog.

another consists only in the different collections of simple ideas to which we have given those different names.

3.6.39 *Genera and species are for the sake of naming.*—How far the making of species and genera serves general names, and how necessary general names are, if not to the existence of a species, then at least to completing it and making it pass as such, will appear from a very familiar example, besides what was said above about ice and water. A silent watch and a striking watch are only one species to those who have only one name for them. But to someone who has the name watch for one and clock for the other, and distinct complex ideas to which those names belong, they are different species.[26] Perhaps it will be said that the inner mechanism and constitution of these two are different, and that the watchmaker has a clear idea of the difference. And yet it is plain that they are only one species to him when he has only one name for them. For what in the inner mechanism is enough to make a new species? Some watches are made with four wheels, others with five: is this a specific difference to the craftsman? Some have strings and fusees, and others none. Some have the balance loose, others have it regulated by a spiral spring, and others by hog's bristles. Are any or all of these enough to make a specific difference to the craftsman, who knows each of these and several other different mechanisms in the internal constitution of watches?[27] It is certain that each of these has a real difference from the rest. But whether it is an essential, a specific difference or not depends only on the complex idea to which the name watch is given. As long as they all agree in the idea that name stands for, and the name does not, as a generic name, include different species under it, they are neither essentially nor specifically different. But suppose someone makes finer divisions based on differences he knows in the internal frame of watches, and gives these precise complex ideas names that catch on. Then they will be new species to

26 A striking watch or clock sounds the hours; a silent one only shows them.
27 A fusee is a cone-shaped pulley, wound with a cord or chain, that evens out the pull of the mainspring. Hog's bristles served as an early regulator of the balance.

those who have those ideas with names attached and who can use those differences to distinguish watches into these several sorts, and watch will then be a generic name. But they would still be no distinct species to people ignorant of clockwork and the inner mechanisms of watches, who had no idea beyond the outward shape and size and the hand marking the hours. For to them all those other names would be only synonymous terms for the same idea, and would signify nothing more, and nothing other, than a watch. It is just so, I think, with natural things. Nobody will doubt that the wheels or springs inside (if I may put it that way) are different in a rational man and in a severely intellectually disabled person. Nor will anybody doubt that there is a difference in frame between a drill and such a person. But whether one or both of these differences are essential or specific can be known to us only by their agreement or disagreement with the complex idea that the name man stands for. By that alone can it be determined whether one, or both, or neither of them is a man.

3.6.40 *Species of artificial things less confused than natural ones.*— From what has been said, we can see why there is generally less confusion and uncertainty in the species of artificial things than in natural ones. An artificial thing is a production of man. The craftsman designed it and therefore knows its idea well. So its name is supposed to stand for no other idea, and to imply no other essence, than what can be known with certainty and is easy enough to grasp. For the idea or essence of the various sorts of artificial things consists, for the most part, in nothing but the definite shape of sensible parts, and sometimes a motion depending on it, which the craftsman fashions in whatever matter he finds suits his purpose. So it is not beyond the reach of our faculties to attain a certain idea of it. Nor is it beyond them to settle the meaning of the names by which the species of artificial things are distinguished, with less doubt, obscurity, and equivocation than we can manage with natural things, whose differences and operations depend on mechanisms beyond the reach of our discoveries.

3.6.41 *Artificial things of distinct species.*—I must be excused here if I think artificial things are of distinct species just as natural ones are. I find they are ranked into sorts as plainly and orderly as natural substances, by different abstract ideas with general names attached to them, and those sorts are as distinct from one another. Why should we not think a watch and a pistol as distinct species from each other as a horse and a dog, since they are expressed in our minds by distinct ideas, and to others by distinct names?

3.6.42 *Substances alone have proper names.*—It should further be observed about substances that they alone, of all our sorts of ideas, have particular or proper names, by which one single particular thing is signified. With simple ideas, modes, and relations, men seldom have occasion to mention this or that particular one often when it is absent. Besides, most mixed modes are actions that perish as they are born, and so they cannot last as substances do. Substances are the agents, and in them the simple ideas that make up the complex ideas designated by the name have a lasting union.

3.6.43 *Difficulty of treating of words.*—I must beg my reader's pardon for having dwelt so long on this subject, and perhaps with some obscurity. But I ask that it be considered how difficult it is to lead another person by words into thinking of things stripped of the specific differences we give them. If I do not name those things, I say nothing. If I do name them, I thereby rank them into some sort or other and suggest to the mind the usual abstract idea of that species, and so defeat my purpose. Consider what it would mean to talk of a man while setting aside the ordinary meaning of the name man, which is the complex idea usually attached to it. One would have to bid the reader consider man as he is in himself, and as he is really distinguished from others in his internal constitution, or real essence—that is, by something, he knows not what. That looks like trifling. And yet this is what anyone must do who wants to speak of the supposed real essences and species of things as though they were made by nature, if only to make it understood that no such thing is signi-

fied by the general names by which substances are called. But it is difficult to do this with known, familiar names, so allow me to try it by an example. I want to make a little clearer the different ways the mind considers specific names and ideas. I also want to show how the complex ideas of modes are sometimes referred to archetypes in the minds of other intelligent beings (or, what comes to the same thing, to the meaning others attach to their accepted names), and sometimes to no archetypes at all. Allow me also to show how the mind always refers its ideas of substances, as to archetypes, either to the substances themselves or to the meaning of their names. And allow me to make plain the nature of species, or the sorting of things, as we apprehend and use it, and of the essences belonging to those species. This is perhaps of more importance for discovering the extent and certainty of our knowledge than we at first imagine.

ADAM NAMES JEALOUSY AND GOLD

Locke imagines Adam coining kinneah and niouph for mixed modes and zahab for a newly found substance.

3.6.44 *Instances of mixed modes in kinneah and niouph.*—Let us suppose Adam as a grown man, with a good understanding, but in a strange country, where everything around him is new and unknown. He has no other faculties for gaining knowledge of these things than someone in our own age has now. He observes that Lamech is more melancholy than usual. He imagines this comes from a suspicion Lamech has of his wife Adah, whom he loved most ardently, that she was too fond of another man. Adam tells Eve these thoughts of his and asks her to take care that Adah does not commit folly. In these conversations with Eve he uses two new words, kinneah and niouph.[28] In time Adam's mistake comes to light, for he finds that Lamech's trouble came from having killed a man. Yet the two names, kinneah and niouph, did not lose their distinct meanings: the one

28 Kinneah and niouph are Locke's transliterations of the Hebrew words for "jealousy" and "adultery." Lamech and Adah appear in Genesis 4.

stood for a husband's suspicion that his wife is disloyal to him, the other for the act of committing disloyalty. It is plain, then, that here were two distinct complex ideas of mixed modes, with names attached, two distinct species of action, essentially different. I ask: in what did the essences of these two distinct species of action consist? It is plain that each consisted in a precise combination of simple ideas, different in the one from the other.[29] I ask whether the complex idea in Adam's mind that he called kinneah was adequate or not. It is plain that it was. It was a combination of simple ideas that he put together voluntarily, without regard to any archetype or reference to anything as a pattern. He abstracted it and gave it the name kinneah, in order to express briefly to others, by that one sound, all the simple ideas contained and united in that complex one. So it must necessarily follow that it was an adequate idea. Since his own choice had made that combination, it had in it everything he intended it to have. So it could not fail to be perfect, could not fail to be adequate, since it was referred to no other archetype that it was supposed to represent.

3.6.45 These words, kinneah and niouph, gradually came into common use, and then the case was somewhat altered. Adam's children had the same faculties he had, and so the same power to make whatever complex ideas of mixed modes they pleased in their own minds, to abstract them, and to make whatever sounds they pleased the signs of them. But the use of names is to make the ideas within us known to others. That cannot be done unless the same sign stands for the same idea in two people who want to communicate their thoughts and talk together. So those of Adam's children who found these two words, kinneah and niouph, in familiar use could not take them for meaningless sounds. They had to conclude that the words stood for something: for certain ideas, abstract ideas, since they were general names. And these abstract ideas were the essences of the species distinguished by those names. If, then, they wanted to use these words as names of species already established and agreed on,

29 Lamech's admission that he killed a man is in Genesis 4:23.

they were obliged to conform the ideas in their minds signified by these names to the ideas the names stood for in other people's minds, as to their patterns and archetypes. And then indeed their ideas of these complex modes were liable to be inadequate. They were very apt not to conform exactly to the ideas in the minds of others using the same names, especially those ideas that consisted of combinations of many simple ideas. There is, however, usually a remedy at hand for this: when we do not understand a word, we can ask the person who uses it what he means by it. It is as impossible to know for certain what the words jealousy and adultery (which I think correspond to קנאה and נאוף) stand for in the mind of another man with whom I want to talk about them, as it was impossible, at the beginning of language, to know without explanation what kinneah and niouph stood for in another man's mind. In everyone they are voluntary signs.

3.6.46 *Instances of substances in zahab.*—Let us now also consider, in the same way, the names of substances when first applied. One of Adam's children, roaming in the mountains, comes upon a glittering substance that pleases his eye. He carries it home to Adam, who examines it and finds it to be hard, of a bright yellow color, and of exceedingly great weight. These, perhaps, are at first all the qualities he notices in it. He abstracts this complex idea, consisting of a substance with that distinctive bright yellowness and a weight very great in proportion to its bulk. Then he gives it the name zahab, to denote and mark all substances that have these sensible qualities.[30] It is evident now that in this case Adam acts quite differently from the way he acted before, when he formed the ideas of mixed modes to which he gave the names kinneah and niouph. There he put ideas together by his own imagination alone, not taking them from the existence of anything. He gave them names to denominate all things that should happen to agree with those abstract ideas of his, without considering whether any such thing existed or not. There the standard was of his own making. But in forming his idea of this

30 Zahab is Hebrew for "gold."

new substance he takes the entirely opposite course. Here he has a standard made by nature. He is to represent that standard to himself by the idea he has of it, even when it is absent, and so he puts no simple idea into his complex one except what he perceives from the thing itself. He takes care that his idea conforms to this archetype, and intends the name to stand for an idea that conforms to it.

3.6.47 This piece of matter, which Adam thus named zahab, was quite different from any he had seen before. Nobody, I think, will deny that it is a distinct species with its own essence, or that the name zahab is the mark of the species, a name belonging to all things that partake of that essence. But here it is plain that the essence Adam made the name zahab stand for was nothing but a body that is hard, shining, yellow, and very heavy. The inquisitive human mind, however, is not content with knowing these superficial qualities, as I may call them, and it prompts Adam to examine this matter further. So he knocks it and beats it with flints, to see what could be discovered inside. He finds that it yields to blows but does not easily break into pieces, and that it will bend without breaking. Should ductility not now be added to his former idea, and made part of the essence of the species the name zahab stands for? Further trials reveal fusibility and fixedness. Are these not also to be put into the complex idea signified by the name zahab, for the same reason as any of the others? If not, what reason can be shown for one more than for the other? If they must, then all the other properties that further trials discover in this matter ought, for the same reason, to become ingredients of the complex idea the name zahab stands for, and so be the essence of the species marked by that name. And since these properties are endless, it is plain that the idea made in this way, after this archetype, will always be inadequate.

3.6.48 *Their ideas imperfect, and therefore various.*—But this is not all. It would also follow that the names of substances would be supposed to have different meanings as used by different people, and not only to have them (as in truth they do). This

would greatly encumber the use of language. Suppose every distinct quality that anyone discovered in any matter were taken to be a necessary part of the complex idea signified by the common name given to it. Then people must suppose that the same word signifies different things in different people. They cannot doubt that different people may have discovered various qualities in substances of the same name that others know nothing about.

3.6.49 *Therefore, to fix their species, a real essence is supposed.*—To avoid this, people have supposed a real essence belonging to every species, from which all these properties flow, and they would have their name for the species stand for that. But they have no idea of that real essence in substances, and their words signify nothing but the ideas they have. So all this attempt accomplishes is to put the name or sound in place of the thing having that real essence, without knowing what the real essence is. And this is what people do when they speak of species of things as if they were made by nature and distinguished by real essences.

3.6.50 *Which supposition is of no use.*—For let us consider what we mean when we affirm that all gold is fixed. Either this means that fixedness is part of the definition, part of the nominal essence the word gold stands for. In that case the affirmation all gold is fixed contains nothing but the meaning of the term gold. Or else it means that fixedness is not part of the definition of the word gold but is a property of that substance itself. In that case it is plain that the word gold stands in place of a substance having the real essence of a species of things made by nature. Used as such a substitute, the word has so confused and uncertain a meaning that the proposition gold is fixed, though in that sense an affirmation of something real, is a truth that will always fail us in its particular application. So it is of no real use or certainty. However true it may be that all gold, that is, all that has the real essence of gold, is fixed, what good is this while we do not know, in this sense, what is gold and what is not? If we do not know the real essence of gold, it is impossible for us to know

which parcel of matter has that essence, and so whether it is true gold or not.

3.6.51 *Conclusion.*—To conclude: at first Adam had the liberty to make any complex ideas of mixed modes, with no other pattern than his own thoughts, and all men have had that same liberty ever since. Adam was also under the necessity of conforming his ideas of substances to things outside him, as to archetypes made by nature, if he did not want to deceive himself willfully. All men have been under that same necessity ever since. Anyone still has the same liberty Adam had of attaching any new name to any idea (especially the founders of languages, if we can imagine any such), with only this difference. Where people in society have already established a language among themselves, the meanings of words should be altered very cautiously and sparingly. People are already supplied with names for their ideas, and common use has assigned known names to certain ideas, so an affected misapplication of them cannot fail to be very ridiculous. Someone who has new notions will perhaps sometimes venture to coin new terms to express them. But people think this is presumptuous, and it is uncertain whether common use will ever make such terms current. In communicating with others, we must conform the ideas we make the ordinary words of any language stand for to their known proper meanings (which I have already explained at length), or else make known the new meaning we give them.

PARTICLES

Particles such as "but" mark the connections and postures the mind gives to its thoughts.

3.7.1 *Particles connect parts, or whole sentences, together.*—Besides words that are names of ideas in the mind, there are a great many others used to signify the connection the mind gives to ideas, or propositions, with one another. In communicating its thoughts to others, the mind needs signs of the ideas it has before it at the time. But it also needs other signs, to show or

indicate some particular action of its own at that time relating to those ideas. It does this in several ways. For example, is and is not are the general marks of the mind affirming or denying. Besides affirmation and negation, without which there is no truth or falsehood in words, the mind does something more in declaring its views to others. It connects not only the parts of propositions but whole sentences to one another, with their various relations and dependencies, to make a coherent discourse.

3.7.2 *In them consists the art of speaking well.*—The mind unites various affirmations and negations in one continuous piece of reasoning or narration. The words by which it signifies what connection it gives to them are generally called particles, and the clearness and beauty of a good style consist especially in the right use of these. To think well, it is not enough for a man to have clear and distinct ideas in his thoughts, or to observe the agreement or disagreement of some of them. He must think in sequence, and observe how his thoughts and reasonings depend on one another. And to express such methodical and rational thoughts well, he must have words to show what connection, restriction, distinction, opposition, emphasis, and so on, he gives to each part of his discourse. A mistake in any of these puzzles his hearer instead of informing him. That is why these words, though by themselves they are not truly names of any ideas, are of such constant and indispensable use in language, and do so much to help people express themselves well.

3.7.3 *They show what relation the mind gives to its own thoughts.*—This part of grammar has perhaps been as much neglected as some others have been over-diligently cultivated. It is easy for people to write, one after another, about cases and genders, moods and tenses, gerunds and supines. Great diligence has been spent on these and the like, and in some languages the particles themselves have been ranked into their various orders with a great show of exactness. But although prepositions and conjunctions, etc., are well-known names in grammar, and the particles contained under them are carefully ranked into their

distinct subdivisions, anyone who wants to show the right use of particles, and what meaning and force they have, must take a little more trouble. He must enter into his own thoughts and observe closely the various postures of his mind in discoursing.

3.7.4 Nor is it enough, in explaining these words, to render them, as dictionaries usually do, by the words of another language that come nearest to their meaning. What they mean is commonly as hard to understand in one language as in another. They are all marks of some action or indication of the mind. So to understand them rightly, we must diligently study the various views, postures, stands, turns, limitations, and exceptions, and various other thoughts of the mind, for which we have either no names or very deficient ones. There is a great variety of these, far more than the number of particles most languages have to express them. So it is no wonder that most of these particles have various, and sometimes almost opposite, meanings. In Hebrew there is a particle consisting of only a single letter, for which seventy different meanings are counted, as I remember. I am sure there are more than fifty.[31]

3.7.5 *Instance in but.*—But is a particle, and none is more familiar in our language. Someone who says it is a discretive conjunction, and that it corresponds to *sed* in Latin or *mais* in French, thinks he has explained it well enough. But it seems to me to indicate several relations that the mind gives to the various propositions, or parts of them, that it joins by this monosyllable.

First, "but to say no more": here it indicates that the mind stops in the course it was taking, before it has quite reached the end.

Second, "I saw but two plants": here it shows that the mind limits the sense to what is expressed, and excludes everything else.

Third, "you pray; but it is not that God would bring you to the true religion."

Fourth, "but that he would confirm you in your own." The first of these buts indicates a supposition in the mind of some-

thing other than it should be. The second shows that the mind sets up a direct opposition between that and what comes before it.

Fifth, "all animals have sense; but a dog is an animal": here it signifies little more than that the second proposition is joined to the first as the minor premise of a syllogism.

3.7.6 *This matter only lightly touched on here.*—I do not doubt that a great many other meanings of this particle could be added to these, if it were my business to examine it in its full range and consider it in every place it is found. If one did that, I doubt whether it would deserve, in all the ways it is used, the title discretive that grammarians give it. But I do not intend a full explanation of this sort of sign here. The instances I have given of this one may prompt us to reflect on the use and force of such signs in language. They may lead us to contemplate the various actions of our minds in discoursing, which the mind has found a way to indicate to others by these particles. Some of these particles always, and others in certain constructions, contain within them the sense of a whole sentence.

ABSTRACT AND CONCRETE TERMS

No two abstract terms can be affirmed of each other, and substances have almost no abstract names.

3.8.1 *Abstract terms not predicable of one another, and why.*—If the ordinary words of language, and our common use of them, had only been considered with attention, they would have shed light on the nature of our ideas. The mind, as has been shown, has a power to abstract its ideas, and so they become essences, general essences, by which the sorts of things are distinguished. Now each abstract idea is distinct, so that of any two the one can never be the other, and the mind will perceive their difference by its intuitive knowledge. Therefore in propositions no two whole ideas can ever be affirmed of one another. We see this in

31 Probably the Hebrew prefix vav (ו), usually "and," which has a great many senses.

the common use of language, which does not allow any two abstract words, or names of abstract ideas, to be affirmed of one another. It is certain that man is an animal, or rational, or white. Yet however closely related these may seem, everyone perceives at first hearing that these propositions are false: humanity is animality, or rationality, or whiteness. And this is as evident as any of the most accepted maxims. All our affirmations, then, are only in the concrete. That is, they affirm not that one abstract idea is another, but that one abstract idea is joined to another. In substances these abstract ideas may be of any sort, and the most frequent are powers; in everything else they are little more than relations. For example, "a man is white" signifies that the thing that has the essence of a man also has in it the essence of whiteness, which is nothing but a power to produce the idea of whiteness in someone whose eyes can discern ordinary objects. Or again, "a man is rational" signifies that the same thing that has the essence of a man also has in it the essence of rationality, that is, a power of reasoning.

3.8.2 *They show the difference of our ideas.*—This distinction of names also shows us the difference of our ideas. If we observe them, we shall find that our simple ideas all have abstract as well as concrete names. To speak the language of grammarians, one is a substantive and the other an adjective: as whiteness, white; sweetness, sweet. The same holds in our ideas of modes and relations, as justice, just; equality, equal. There is only this difference: some concrete names of relations, chiefly those among men, are substantives, as paternitas, pater. It would be easy to give a reason for this. But for our ideas of substances we have very few abstract names, or none at all.[32] The schools have introduced animalitas, humanitas, corporeitas, and a few others. But these bear no proportion to the infinite number of names of substances, and they were never ridiculous enough to try coining abstract names for all of them. And the few that the schools forged and put into the mouths of their students have never gained admittance into common use or won the license of

32 Paternitas and pater are Latin for "fatherhood" and "father."

public approval.[33] This seems to me, at least, to imply an admission by all mankind that they have no ideas of the real essences of substances, since they have no names for such ideas. They would no doubt have had such names if their consciousness of their own ignorance had not kept them from so idle an attempt. So although they had ideas enough to distinguish gold from a stone, and metal from wood, they ventured only timidly on terms such as aurietas and saxietas, metallietas and lignietas, or similar names. These would claim to signify the real essences of those substances, of which they knew they had no ideas.[34] And indeed it was only the doctrine of substantial forms, and the confidence of misguided pretenders to a knowledge they did not have, that first coined animalitas, humanitas, and the like, and then brought them into use. Even these went very little beyond their own schools and never became current among people of understanding. It is true that humanitas was a familiar word among the Romans, but in a far different sense. It did not stand for the abstract essence of any substance. It was the abstract name of a mode, and its concrete was humanus, not homo.[35]

THE IMPERFECTION OF WORDS

Words serve for recording and communicating thoughts, and their meanings become doubtful for four reasons.

3.9.1 *Words are used for recording and communicating our thoughts.*— From what has been said in the preceding chapters, it is easy to see how imperfect language is. The very nature of words makes it almost unavoidable that many of them should be doubtful and uncertain in their meanings. To examine the perfection or imperfection of words, we must first consider their use and purpose, for they are more or less perfect as they are more or less fit

33 Latin for "animality," "humanity," and "corporeity" (bodiliness).
34 Mock-Latin coinages meaning "goldness," "stoneness," "metalness," and "woodness."
35 For the Romans humanitas meant humane feeling or refined culture. Humanus means "humane" or "human"; homo means "a man."

to achieve it. In the earlier part of this discourse we have often had occasion to mention a double use of words.

First, recording our own thoughts.

Second, communicating our thoughts to others.

3.9.2 *Any words will serve for recording.*—Take the first of these: recording our own thoughts to help our own memories, by which we, so to speak, talk to ourselves. For this any words will do. Since sounds are voluntary and indifferent signs of any ideas, a person may use whatever words he likes to signify his own ideas to himself. There will be no imperfection in them as long as he consistently uses the same sign for the same idea, for then he cannot fail to have his meaning understood. That is what the right use and perfection of language consists in.

3.9.3 *Communication by words, civil or philosophical.*—As for communication by words, that too has a double use:

I. Civil.

II. Philosophical.

First, by their civil use I mean the kind of communication of thoughts and ideas by words that serves to keep up ordinary conversation and dealings about the everyday business and conveniences of civil life, among people living together in society.

Second, by the philosophical use of words I mean the kind of use that serves to convey the precise notions of things, and to express certain and undoubted truths in general propositions that the mind can rest on and be satisfied with in its search for true knowledge. These two uses are quite distinct, and much less exactness will do in the one than in the other, as we shall see in what follows.

3.9.4 *The imperfection of words lies in the doubtfulness of their meaning.*—The chief purpose of language in communication is to be understood. So words do not serve that purpose well, in either civil or philosophical discourse, when a word does not arouse in the hearer the same idea that it stands for in the speaker's mind. Now sounds have no natural connection with our ideas. They get all their meaning from the arbitrary imposition of human beings. So the doubtfulness and uncertainty of

their meaning, which is the imperfection we are talking about here, has its cause more in the ideas they stand for than in any greater incapacity in one sound than in another to signify an idea. In that respect they are all equally perfect.

What makes some words more doubtful and uncertain in meaning than others, then, is the difference in the ideas they stand for.

3.9.5 *Causes of their imperfection.*—Since words have no meaning by nature, the idea each one stands for has to be learned and remembered by anyone who wants to exchange thoughts and hold intelligible conversation with others in any language. But this is hardest to do in the following cases:

First, where the ideas they stand for are very complex, made up of a great number of ideas put together.

Second, where the ideas they stand for have no fixed connection in nature, and so no settled standard existing anywhere in nature by which to correct and adjust them.

Third, where the meaning of the word is referred to a standard that is not easy to know.

Fourth, where the meaning of the word and the real essence of the thing are not exactly the same.

These are difficulties that attend the meaning of various words that are intelligible. Words that are not intelligible at all need not be mentioned here. Such are names standing for simple ideas that someone lacks the organs or faculties to acquire, like the names of colors to a blind man, or of sounds to a deaf man.

In all these cases we shall find an imperfection in words, which I will explain more fully as it applies to our several sorts of ideas. If we examine them, we shall find that the names of mixed modes are most liable to doubtfulness and imperfection for the first two of these reasons, and the names of substances chiefly for the last two.

3.9.6 *The names of mixed modes are doubtful.*—First, many names of mixed modes are liable to great uncertainty and obscurity in their meaning.

First, because the ideas they stand for are so complex.—I. This is because of the great number of parts these complex ideas are often made of. For words to serve the purpose of communication, they must (as has been said) arouse in the hearer exactly the same idea they stand for in the speaker's mind. Without this, people fill one another's heads with noise and sounds, but they do not convey their thoughts or lay their ideas before one another, which is the purpose of discourse and language. But when a word stands for a very complex idea, compounded and compounded again, it is not easy for people to form and retain that idea exactly enough for the name, in common use, to stand for the same precise idea without the slightest variation. That is why people's names for very compound ideas, as moral words mostly are, seldom have the same precise meaning in two different people. One person's complex idea seldom agrees with another's, and it often differs even from his own: from the one he had yesterday, or will have tomorrow.

3.9.7 *Second, because they have no standards.*—II. The names of mixed modes mostly lack standards in nature by which people might correct and adjust their meanings, and for that reason they are very variable and doubtful. They are collections of ideas put together as the mind pleases, pursuing its own purposes in discourse and fitted to its own notions. In making them the mind does not aim to copy anything that really exists. It aims to name and classify things according to whether they agree with the archetypes or forms it has made. Whoever first brought the word "sham," or "wheedle," or "banter" into use put together, as he saw fit, the ideas he made it stand for. As it is with any new names of modes now being brought into a language, so it was with the old ones when they were first used. Names that stand for collections of ideas the mind makes at pleasure must therefore be doubtful in meaning. Such collections are nowhere found constantly united in nature, and no patterns can be shown by which people might adjust them.

What the word "murder" or "sacrilege," etc.,[36] signifies can never be learned from the things themselves. Many of the parts of those complex ideas are not visible in the action itself. The intention of the mind, or the relation to holy things, which makes up part of murder or sacrilege, has no necessary connection with the outward, visible action of the person who commits either one. Pulling the trigger of the gun with which the murder is committed is perhaps the only part of the action that is visible, and it has no natural connection with the other ideas that make up the complex idea named "murder." These ideas get their union and combination only from the understanding, which unites them under one name. But since it unites them without any rule or pattern, the meaning of a name standing for such voluntary collections is bound to vary often in the minds of different people, who have hardly any fixed rule to guide themselves and their notions by in such arbitrary ideas.

3.9.8 *Propriety is not a sufficient remedy.*—It is true that common use, which is the rule of propriety, may be supposed to give some help here in settling the meaning of language. It cannot be denied that to some extent it does. Common use regulates the meaning of words fairly well for ordinary conversation. But nobody has the authority to establish the precise meaning of words, or to decide what ideas anyone shall attach to them, and so common use is not enough to adjust them for philosophical discourse. There is hardly any name of a very complex idea (to say nothing of others) that does not have great latitude in common use, and that could not be made the sign of very different ideas while staying within the bounds of propriety. Besides, since the rule and measure of propriety itself is established nowhere, it is often a matter of dispute whether this or that way of using a word is proper speech or not. From all this it is evident that the names of such very complex ideas are naturally liable to this imperfection of being doubtful and uncertain in meaning. Even among people who want to understand one

36 "Sham," "wheedle," and "banter" were fashionable new coinages of the later seventeenth century.

another, they do not always stand for the same idea in speaker and hearer. The names "glory" and "gratitude" are the same in everyone's mouth throughout a whole country. Yet the complex, collective idea that each person thinks of or means by that name is plainly very different among people using the same language.

3.9.9 *The way these names are learned also adds to their doubtfulness.*—The way in which the names of mixed modes are usually learned also contributes a good deal to the doubtfulness of their meaning. If we observe how children learn languages, we find that people usually teach them what the names of simple ideas or substances stand for by showing them the thing they want them to have the idea of, and then repeating to them the name that stands for it: "white," "sweet," "milk," "sugar," "cat," "dog." But with mixed modes, especially the most important of them, moral words, the sounds are usually learned first. Then, to know what complex ideas they stand for, children must either depend on others' explanations or (as mostly happens) are left to their own observation and effort. Little of that effort is spent in searching for the true and precise meaning of names, and so these moral words are, in most people's mouths, little more than bare sounds. When they do have some meaning, it is mostly a very loose and indeterminate one, and therefore obscure and confused. Even those who have settled their notions with more care can hardly avoid the inconvenience of having them stand for complex ideas different from those that other people, even intelligent and studious ones, make them the signs of. Where will you find any debate, controversial or casual, about honor, faith, grace, religion, church, and so on, in which it is not easy to see the different notions people have of them? This simply means that they do not agree on the meaning of those words, and do not have in their minds the same complex ideas that they make them stand for. So all the disputes that follow are only about the meaning of a sound. Hence we see that there is no end to the interpretation of laws, whether divine or human. Comments beget comments, explanations create new material for explanations, and there is no end to limiting, distinguishing,

and varying the meaning of these moral words. These ideas of human making are multiplied *in infinitum* by people who still have the same power to make them. Many a man who was fairly satisfied about the meaning of a text of scripture or a clause in the law code on first reading has completely lost its sense by consulting commentators. Their elucidations have raised his doubts or increased them, and have cast obscurity over the passage. I do not say this because I think commentaries are unnecessary. I say it to show how uncertain the names of mixed modes naturally are, even in the mouths of those who had both the intention and the ability to speak as clearly as language could express their thoughts.

3.9.10 *Hence the unavoidable obscurity in ancient authors.*—There is no need to point out what obscurity this has unavoidably brought on the writings of people who lived in remote ages and in other countries. The many volumes of learned men who have devoted their thought to that task are more than enough proof of how much attention, study, sagacity, and reasoning it takes to find out the true meaning of ancient authors. But the only writings whose meaning we have any great reason to be anxious about are those that contain either truths we are required to believe or laws we must obey, which bring trouble on us when we misunderstand or break them. We can be less anxious about the sense of other authors. Since they write only their own opinions, we are under no greater need to know them than they are to know ours. Our good or harm does not depend on their decrees, so we can safely be ignorant of their notions. When we read them, then, if they do not use their words with proper clarity and perspicuity, we may put them aside and, without doing them any wrong, resolve to ourselves:

"*Si non vis intelligi, debes negligi*": if you do not want to be understood, you deserve to be ignored.[37]

3.9.11 *Names of substances are of doubtful meaning.*—The names of mixed modes are uncertain in meaning because there are no real standards existing in nature to which those ideas are

37 A proverbial Latin tag.

referred and by which they can be adjusted. The names of substances are doubtful in meaning for the opposite reason: namely, because the ideas they stand for are supposed to conform to the reality of things and are referred to standards made by nature. With our ideas of substances we do not have the freedom we have with mixed modes to frame whatever combinations we see fit as the distinguishing marks by which to classify and name things. Here we must follow nature, fit our complex ideas to real existences, and regulate the meaning of their names by the things themselves, if we want our names to be signs of them and stand for them. Here, it is true, we have patterns to follow. But they are patterns that will make the meaning of the names very uncertain. Names must have a very unsteady and variable meaning if the ideas they stand for are referred to standards outside us that either cannot be known at all or can be known only imperfectly and uncertainly.

3.9.12 *Names of substances are referred, first, to real essences, which cannot be known.*—The names of substances, as has been shown, have a double reference in their ordinary use.

First, they are sometimes made to stand for the real constitution of things, from which all their properties flow and in which they all center, and so their meaning is supposed to correspond to it. But this real constitution (or essence, as it tends to be called) is utterly unknown to us, and so any sound put to stand for it must be very uncertain in its application. It will be impossible to know what things are, or ought to be, called "horse" or "antimony" when those words are put for real essences of which we have no idea at all. So on this supposition, since the names of substances are referred to standards that cannot be known, their meanings can never be adjusted and established by those standards.

3.9.13 *Second, to coexisting qualities, which are known only imperfectly.*—What the names of substances immediately signify are the simple ideas found to coexist in substances. So these ideas, as united in the various sorts of things, are the proper standards to which the names are referred and by which their meanings

can best be corrected. But not even these archetypes serve this purpose well enough to keep these names from having very variable and uncertain meanings. The simple ideas that coexist and are united in the same subject are very numerous, and all have an equal right to go into the complex specific idea that the name of the species is to stand for. So people frame very different ideas of the very same subject, even when they set themselves to consider it; and the name they use for it unavoidably comes to have very different meanings in different people. The simple qualities that make up the complex ideas are mostly powers, relating to the changes they are apt to make in other bodies or to receive from them, and they are almost infinite. Consider what a great variety of alterations any of the base metals is apt to undergo merely from different applications of fire, and how many more changes any of them will undergo in the hands of a chemist when other bodies are applied to it. Anyone who observes this will not think it strange that I consider the properties of any sort of body hard to collect and to know completely by the methods of inquiry our faculties are capable of. These properties are at least so many that no one can know their precise and definite number, and different people discover different ones, according to their varying skill, attention, and ways of handling things. These people therefore cannot help having different ideas of the same substance, and so they make the meaning of its common name very variable and uncertain. The complex ideas of substances are made up of simple ideas that are supposed to coexist in nature, and so everyone has a right to put into his complex idea the qualities he has found united together. Thus in the substance gold one person contents himself with color and weight, while another thinks that solubility in aqua regia must be joined with that color in his idea of gold as necessarily as anyone thinks its fusibility must be. After all, solubility in aqua regia is a quality as constantly joined with its color and weight as fusibility or any other. Others put ductility or fixedness, etc., into it, as they have been taught by tradition or experience. Which of all these people has established the

right meaning of the word "gold"? Or who is to be the judge that decides? Each has his standard in nature, which he appeals to. He reasonably thinks he has as much right to put into his complex idea signified by the word "gold" the qualities he has found united on trial, as another who has not examined so well has to leave them out, or a third who has made other trials has to put in others. The union of these qualities in nature is the true ground of their union in one complex idea. So who can say that one of them has more reason to be put in or left out than another? From this it will always unavoidably follow that the complex ideas of substances will vary a great deal among people who use the same name for them, and so the meanings of those names will be very uncertain.

3.9.14 *Third, to coexisting qualities, which are known only imperfectly.*—Besides, there is hardly any particular existing thing that does not share some of its simple ideas with a larger number of particular beings, and others with a smaller number. Who, in that case, is to determine which ones make up the precise collection signified by the name of the species? And who can prescribe, with any just authority, which obvious or common qualities are to be left out of the meaning of the name of any substance, or which more hidden or more particular ones are to be put into it? All these things together seldom or never fail to produce that variable and doubtful meaning in the names of substances which causes such uncertainty, disputes, and mistakes when we come to use them philosophically.

3.9.15 *With this imperfection, they may serve for civil use, but not well for philosophical use.*—It is true that in civil and ordinary conversation the general names of substances do well enough to designate the things people want to be understood to be talking about. Their ordinary meaning is regulated by some obvious qualities: by shape and figure in things known to reproduce from seed, and in other substances mostly by color joined with some other sensible qualities. And so people usually conceive the substances meant by the words "gold" or "apple" well enough to distinguish the one from the other. But in philosoph-

ical inquiries and debates, where general truths are to be established and consequences drawn from the positions laid down, the precise meaning of the names of substances will be found not only to be poorly established, but also very hard to establish. For example, someone who makes malleability, or a certain degree of fixedness, part of his complex idea of gold may make propositions about gold and draw consequences from them that truly and clearly follow from "gold" taken in that meaning. Yet another person who does not make malleability, or the same degree of fixedness, part of the complex idea that the name "gold" stands for in his use of it can never be forced to accept those consequences, or be convinced of their truth.

THE PHYSICIANS AND THE WORD "LIQUOR"

A dispute among physicians about fluid in the nerves turns out to be about the meaning of one word.

3.9.16 *An example: liquor.*—This is a natural and almost unavoidable imperfection in nearly all names of substances, in every language whatever. People will easily find it once they move from confused or loose notions to stricter and closer inquiries, for then they will be convinced how doubtful and obscure in meaning those words are that seemed very clear and definite in ordinary use. I was once at a meeting of very learned and able physicians where the question happened to arise whether any liquor passed through the filaments of the nerves.[38] The debate was carried on for a good while, with a variety of arguments on both sides. I had long been in the habit of suspecting that most disputes were more about the meaning of words than about a real difference in how things are conceived. So I asked that, before they went any further in this dispute, they first examine and establish among themselves what the word "liquor" meant. At first they were a little surprised at the proposal. Had they been less intelligent people, they might perhaps have taken it for a

38 "Liquor" here means any liquid. The question was whether the nerves carry a fluid, the "animal spirits" of contemporary physiology.

very frivolous or eccentric one, since no one there doubted that he understood perfectly well what the word "liquor" stood for. I also think it is not one of the most perplexing names of substances. However, they were good enough to go along with my suggestion. On examination they found that the meaning of the word was not as settled and certain as they had all imagined, and that each of them made it the sign of a different complex idea. This made them believe that the main part of their dispute was about the meaning of that term. They differed very little in their opinions about some fluid and subtle matter passing through the channels of the nerves, though it was not so easy to agree whether it should be called "liquor" or not. Once they considered it, they thought that point not worth arguing about.

3.9.17 *An example: gold.*—How far this is the case in most of the disputes people engage in so hotly, I may perhaps have occasion to point out elsewhere. Here let us just consider a little more exactly the example of the word "gold" mentioned above, and we shall see how hard it is to determine its meaning precisely. I think everyone agrees to make it stand for a body of a certain shining yellow color. That is the idea to which children have attached the name, so for them the shining yellow part of a peacock's tail is properly gold. Others find fusibility joined with that yellow color in certain portions of matter, and they make that combination into a complex idea to which they give the name "gold," to denote a sort of substance. So they exclude from being gold all shining yellow bodies that fire reduces to ashes. They admit into that species, or include under the name "gold," only substances that have that shining yellow color and are melted by fire rather than reduced to ashes. Another person, for the same reason, adds the weight. Since this quality is as closely joined with that color as its fusibility is, he thinks it has the same right to be joined in the idea and signified by the name. He therefore thinks the other idea, made up of a body with such a color and fusibility, is incomplete. And so on with all the rest. In all this no one can give a reason why some of the inseparable qualities that are always united in nature should be put into the

nominal essence and others left out. Nor can anyone say why the word "gold," signifying the sort of body the ring on his finger is made of, should determine that sort by its color, weight, and fusibility rather than by its color, weight, and solubility in aqua regia since its dissolving in that liquid is as inseparable from it as its melting in fire. Both are nothing but the relation that substance has to two other bodies which have a power to act on it in different ways. By what right, then, does fusibility come to be part of the essence signified by the word "gold," and solubility only a property of it? Or why is its color part of the essence, and its malleability only a property? What I mean is this. These are all just properties depending on its real constitution, nothing but powers, active or passive, in relation to other bodies. So no one has the authority to fix the meaning of the word "gold" (as referred to such a body existing in nature) to one collection of ideas found in that body rather than to another. The meaning of that name must therefore unavoidably be very uncertain, since, as has been said, different people observe different properties in the same substance, and I think I may say that nobody observes them all. And so we have only very imperfect descriptions of things, and words have very uncertain meanings.

3.9.18 *The names of simple ideas are the least doubtful.*—From what has been said, it is easy to see what was remarked earlier: namely, that the names of simple ideas are, of all names, the least liable to mistakes. There are two reasons for this. First, the ideas they stand for are each only one single perception, and so they are much more easily acquired and more clearly retained than the more complex ones. They are not liable to the uncertainty that usually attends the compounded ideas of substances and mixed modes, where people do not easily agree on the precise number of simple ideas that make them up, or readily keep it in mind. Second, they are never referred to any other essence than simply the perception they immediately signify. It is that further reference which makes the meaning of the names of substances naturally so perplexed and gives rise to so many disputes. People who do not use their words perversely, or deliber-

ately set out to quibble, seldom mistake the use and meaning of the names of simple ideas in any language they know. "White" and "sweet," "yellow" and "bitter" carry a very obvious meaning with them. Everyone either understands it precisely or easily sees that he does not know it, and seeks to be told. But what precise collection of simple ideas "modesty" or "frugality" stands for in someone else's use is not so certainly known. However much we tend to think we know well enough what is meant by "gold" or "iron," the precise complex idea that others make them the signs of is not so certain. I believe it is very seldom that they stand for exactly the same collection in speaker and hearer. This must produce mistakes and disputes when they are used in discourses where people deal with universal propositions, and want to settle universal truths in their minds and consider the consequences that follow from them.

3.9.19 *And next to them, simple modes.*—By the same rule, the names of simple modes are, next to those of simple ideas, the least liable to doubt and uncertainty. This is especially true of figure and number, of which people have such clear and distinct ideas. Who that wanted to understand them ever mistook the ordinary meaning of "seven," or "a triangle"? And in general, the least compounded ideas of every kind have the least doubtful names.

3.9.20 *The most doubtful are the names of very compounded mixed modes and of substances.*—So mixed modes made up of only a few obvious simple ideas usually have names whose meaning is not very uncertain. But names of mixed modes that comprise a great number of simple ideas are commonly of very doubtful and indeterminate meaning, as has been shown. The names of substances are attached to ideas that are neither the real essences nor exact representations of the patterns they are referred to. They are therefore liable to still greater imperfection and uncertainty, especially when we come to use them philosophically.

3.9.21 *Why this imperfection is charged to words.*—The great disorder in our names of substances comes mostly from our lack of

knowledge and our inability to penetrate their real constitutions. So it may well be asked why I charge this as an imperfection to our words rather than to our understandings. This objection seems so just that I think I owe a reason for proceeding as I have. I must confess, then, that when I first began this discourse on the understanding, and for a good while afterward, I had not the slightest thought that any consideration of words was at all necessary to it. But after going through the origin and composition of our ideas, I began to examine the extent and certainty of our knowledge. I then found that it was so closely connected with words that very little could be said clearly and to the point about knowledge unless their force and way of signifying were first carefully observed. Knowledge is concerned with truth, and so it has constantly to do with propositions. And though it ends in things, it does so mostly through the intervention of words, so much so that words seemed hardly separable from our general knowledge. At least they interpose themselves so much between our understandings and the truth that the understanding wants to contemplate and grasp that, like the medium through which visible objects pass, their obscurity and disorder quite often cast a mist before our eyes and deceive our understandings. Consider how great a part of the fallacies people impose on themselves as well as on others, and of the mistakes in their disputes and notions, is owing to words and their uncertain or mistaken meanings. If we do, we shall have reason to think this no small obstacle on the road to knowledge. I conclude that we need to be all the more carefully warned of it because, far from being noticed as a problem, the arts of increasing it have been made the business of people's study, and have won the reputation of learning and subtlety, as we shall see in the next chapter. But I am inclined to think that if the imperfections of language, as the instrument of knowledge, were weighed more thoroughly, a great many of the controversies that make such a noise in the world would cease of themselves. The road to knowledge, and perhaps to peace as well, would lie a great deal more open than it does.

3.9.22 *This should teach us moderation in imposing our own sense on old authors.*—Of this I am sure: in every language the meaning of words depends very much on the thoughts, notions, and ideas of the person using them, and so it must unavoidably be very uncertain even to people of the same language and country. This is so evident in the Greek authors that anyone who reads their writings will find in almost every one of them a distinct language, though the words are the same. But to this natural difficulty within every country we must add different countries and remote ages, in which speakers and writers had very different notions, temperaments, customs, ornaments, figures of speech, and so on, each of which influenced the meaning of their words then, though they are now lost and unknown to us. When all this is added, it would become us to be charitable to one another in our interpretations or misunderstandings of those ancient writings. It matters greatly that they be understood, but they are subject to the unavoidable difficulties of speech. Apart from the names of simple ideas and some very obvious things, speech cannot convey the speaker's sense and intention to the hearer without any doubt and uncertainty, unless the terms are constantly defined. And in discourses on religion, law, and morality, just as the matters are of the highest importance, so the difficulty will be greatest.

3.9.23 The volumes of interpreters and commentators on the Old and New Testaments are all too plain proof of this. Though everything said in the text is infallibly true, the reader may be—indeed cannot help being—very fallible in understanding it. Nor should we wonder that the will of God, when clothed in words, should be liable to the doubt and uncertainty that unavoidably attends that kind of conveyance, when even his Son, while clothed in flesh, was subject to all the frailties and inconveniences of human nature, sin excepted. And we ought to praise his goodness. He has spread before the whole world such legible characters of his works and providence, and given all mankind so sufficient a light of reason, that those whom this written word never reached could not (whenever they set themselves to

search) doubt either the existence of a God or the obedience due to him. The precepts of natural religion, then, are plain and quite intelligible to all mankind, and are seldom disputed. Other revealed truths, conveyed to us by books and languages, are liable to the common and natural obscurities and difficulties that come with words. So it seems to me it would become us to be more careful and diligent in observing the former, and less magisterial, dogmatic, and domineering in imposing our own sense and interpretations of the latter.

THE ABUSE OF WORDS

Locke lists willful faults: empty words, unsteady use, affected obscurity, taking words for things, and more.

3.10.1 *Abuse of words.*—Besides the imperfection naturally present in language, and the obscurity and confusion so hard to avoid in the use of words, there are several deliberate faults and neglects that people are guilty of in this means of communication. By these they make these signs less clear and distinct in meaning than they naturally need to be.

3.10.2 *First, words without any ideas, or without clear ones.*—First, in this kind, the first and most obvious abuse is using words without clear and distinct ideas, or, worse, signs with nothing signified. Of these there are two sorts.

I. In every language you can find certain words which, if examined, turn out not to stand for any clear and distinct ideas, either in their origin or in their proper use. For the most part these have been introduced by the various sects of philosophy and religion. Their authors or promoters may be aiming at something singular and outside ordinary understanding, or trying to support some strange opinions, or to cover some weakness in their hypothesis. Whatever the reason, they seldom fail to coin new words, and these, when examined, may justly be called meaningless terms. Such words either had no determinate collection of ideas attached to them when they were first invented, or at least had a collection that, if well examined, will

be found inconsistent. So it is no wonder that later, in the common use of the same party, they remain empty sounds with little or no meaning. They stay that way among people who think it enough to have them often on their lips, as the distinguishing marks of their church or school, without troubling their heads much about what precise ideas they stand for. I need not pile up examples here; everyone's reading and conversation will supply him with enough. If he wants a better stock, the great mint-masters of terms of this kind can more than satisfy him. I mean the schoolmen and metaphysicians, and under these, I think, the disputing natural and moral philosophers of recent ages may be included.

3.10.3 II. Others carry this abuse even further. They take so little care to set aside words that hardly had any clear and distinct ideas attached to them in their original meaning that, through an unpardonable negligence, they casually use words without any distinct meaning at all, even words that proper usage has attached to very important ideas. Wisdom, glory, grace, and so on are words common enough in everyone's mouth. But if a great many of the people who use them were asked what they mean by them, they would be stuck and not know what to answer. This is a plain proof that, though they have learned those sounds and have them ready on the tip of their tongue, there are no determined ideas stored up in their minds for those words to express to others.

3.10.4 *Caused by learning names before the ideas they belong to.*— From their cradles people have been used to learning words, which are easily picked up and retained, before they knew or had framed the complex ideas those words were attached to, or the ideas to be found in the things the words were thought to stand for. So they usually go on doing this all their lives. They do not take the trouble needed to settle determined ideas in their minds. Instead they use their words for whatever unsteady and confused notions they have, content to use the same words other people use, as if the very sound necessarily and always carried the same meaning with it. People manage well enough

with this in the ordinary events of life, where they find they need to be understood, and so they keep making signs until they are. But when they come to reason about their tenets or their interests, this meaninglessness in their words plainly fills their talk with a great deal of empty, unintelligible noise and jargon. This is especially so in moral matters. There the words mostly stand for arbitrary and numerous collections of ideas that are not regularly and permanently united in nature, so that often only their bare sounds are thought of, or at least only very obscure and uncertain notions are attached to them. People take the words they find in use among their neighbors, and, so as not to seem ignorant of what they stand for, use them confidently without troubling their heads much about any fixed meaning. Besides being easy, this gives them an advantage: as they are seldom in the right in such discussions, so they can seldom be convinced that they are in the wrong. Trying to draw people with no settled notions out of their mistakes is like trying to evict a vagrant with no settled home. That is my guess, at any rate, and everyone can observe in himself and others whether it is so or not.

3.10.5 *Unsteady application of them.*—Secondly, another great abuse of words is inconsistency in using them. It is hard to find a discourse on any subject, especially a controversial one, in which an attentive reader will not notice the same words used sometimes for one collection of simple ideas and sometimes for another. Usually these are the most important words in the discourse, the ones the argument turns on. This is an outright abuse of language. Words are intended as signs of my ideas, to make them known to others, and they do this by a voluntary imposition, not by any natural meaning. So it is plain cheating and abuse when I make them stand sometimes for one thing and sometimes for another. Doing this deliberately can be put down to nothing but great folly or greater dishonesty. Someone doing accounts with another person might, with just as much fairness, make the numerals stand sometimes for one collection of units and sometimes for another (for example, making the figure 3

stand sometimes for three, sometimes for four, and sometimes for eight), as make the same words stand for different collections of simple ideas in his discourse or reasoning. If people did this in their reckonings, who, I wonder, would want to deal with them? Anyone who spoke this way in the affairs and business of the world, calling eight sometimes seven and sometimes nine as best suited his advantage, would at once have one of the two names people most resent slapped on him. And yet in arguments and learned contests the same sort of proceeding commonly passes for wit and learning. To me it seems a greater dishonesty than misplacing the counters when adding up a debt. The cheat is greater in proportion as truth is of greater importance and value than money.[39]

3.10.6 *Affected obscurity by wrong application.*—Thirdly, another abuse of language is an affected obscurity. It comes from applying old words to new and unusual meanings, or introducing new and ambiguous terms, without defining either, or else from putting words together in a way that confuses their ordinary meaning. The Peripatetic philosophy has been the most outstanding in this, but other sects have not been entirely free of it. Hardly one of them is free of some difficulties (such is the imperfection of human knowledge). They have been obliged to cover these with obscure terms and to confuse the meaning of words, so that, like a mist before people's eyes, it might keep their weak points from being discovered. Anyone who reflects a little can see that *body* and *extension*, in common use, stand for two distinct ideas. If their meaning were exactly the same, it would be as proper and as intelligible to say "the body of an extension" as "the extension of a body." And yet there are those who find it necessary to confuse their meanings. Logic and the liberal sciences, as the schools have treated them, have made this abuse respectable, along with the harm done by confusing the meanings of words. The much-admired art of disputing has added a great deal to the natural imperfection of languages, because it

39 The two names are presumably "fool" and "knave," matching the "folly" and "dishonesty" just mentioned. Counters were tokens used for reckoning sums.

has been used and adapted to muddle the meaning of words rather than to discover the knowledge and truth of things. Anyone who looks into that sort of learned writing will find the words there far more obscure, uncertain, and indeterminate in meaning than they are in ordinary conversation.

3.10.7 *Logic and dispute have contributed much to this.*—This is bound to happen wherever people's abilities and learning are judged by their skill in disputing. These victories depend mostly on fine points and subtleties of words. If reputation and reward follow them, it is no wonder that human wit, so employed, should muddle, entangle, and over-refine the meaning of sounds, so as never to lack something to say in attacking or defending any question. For the victory is awarded to the one who had the last word in the dispute, not to the one who had truth on his side.

3.10.8 *Calling it subtlety.*—This is a very useless skill, and I take it to be the direct opposite of the ways of knowledge. Yet so far it has gone under the praiseworthy and esteemed names of subtlety and acuteness. It has had the applause of the schools and the encouragement of one part of the learned men of the world. And no wonder. The philosophers of old aimed at glory and esteem for their great and universal knowledge, which is a great deal easier to pretend to than really to acquire, and so did the schoolmen after them. (I mean the disputing and wrangling philosophers, the kind Lucian wittily and rightly ridicules.) They found this a handy way to cover their ignorance with an elaborate and inexplicable web of tangled words, and to win the admiration of others with unintelligible terms, which were all the better at producing wonder because they could not be understood.[40] Meanwhile all history shows that these profound doctors were no wiser or more useful than their neighbors, and brought little benefit to human life or to the societies they lived in. The only exception would be if it were profitable to human life, or deserving of praise and reward, to coin new words

40 Lucian of Samosata (2nd century AD), Greek satirist who mocked the philosophical schools, for example in *Philosophies for Sale*.

without producing any new things to apply them to, or to muddle and obscure the meaning of old ones and so bring everything into question and dispute.

3.10.9 *This learning benefits society very little.*—For all these learned disputants and all-knowing doctors, it was to the unscholarly statesman that the governments of the world owed their peace, defense, and liberties. And it was from the unlettered and despised craftsman ("mechanic" being a term of contempt) that they received the improvements in the useful arts. Nevertheless, this artificial ignorance and learned gibberish has prevailed mightily in these recent ages. It has done so through the interest and cunning of those who found no easier way to reach the height of authority and dominion they have attained than to bemuse men of business and the ignorant with hard words, or to occupy the clever and idle with intricate disputes about unintelligible terms, keeping them forever entangled in that endless labyrinth. Besides, there is no better way to gain admission for strange and absurd doctrines, or to defend them, than to surround them with legions of obscure, doubtful, and undefined words. Yet such words make these retreats more like robbers' dens or fox-holes than the fortresses of honorable warriors. If it is hard to get the occupants out, that is not because of any strength in the places themselves. It is because of the briars and thorns and the darkness of the thickets around them. Untruth is unacceptable to the human mind, and so the only defense left for absurdity is obscurity.

3.10.10 *But destroys the instruments of knowledge and communication.*—In this way learned ignorance, and this art of keeping even inquisitive people from true knowledge, has spread through the world, and has greatly confused the understanding while claiming to inform it. We see that other well-meaning and wise people, whose education and abilities had not given them that acuteness, could express themselves intelligibly to one another and benefit from language in its plain use. Unlearned people understood the words white and black, and so on, well enough, and had constant notions of the ideas those words sig-

nify. Yet there were still philosophers to be found with learning and subtlety enough to prove that snow was black, that is, to prove that white was black.[41] This gave them the advantage of destroying the instruments and means of discourse, conversation, instruction, and society. With great art and subtlety they did nothing more than muddle and confuse the meaning of words, and so make language less useful than its real defects had already made it. That was a talent the unlettered never attained.

3.10.11 *As useful as confusing the sounds of the letters.*—These learned men instructed people's understandings and benefited their lives just as much as someone who changed the meaning of familiar letters. Suppose that, by a subtle learned device far beyond the capacity of the unlettered, dull, and common sort, he showed in his writings that he could put A for B and D for E, and so on, to the no small admiration and benefit of his reader. It is just as senseless to take black, a word agreed on to stand for one sensible idea, and put it, I say, for another idea or the contrary one, that is, to call snow black, as to put the mark A for B. A is a letter agreed on to stand for one modification of sound, made by a certain motion of the organs of speech, and B is agreed on to stand for another modification of sound, made by another particular motion of the organs of speech.

3.10.12 *This art has confused religion and justice.*—Nor has this harm stopped at logical niceties or elaborate empty speculations. It has invaded the great concerns of human life and society. It has obscured and muddled the important truths of law and divinity, and brought confusion, disorder, and uncertainty into human affairs. If it has not destroyed those two great rules, religion and justice, it has at least made them largely useless. What have most of the commentaries and disputes on the laws of God and man served for, except to make the meaning more doubtful and confuse the sense? What have all those multiplied elaborate distinctions and acute niceties produced but obscurity

41 The paradox that snow is black was attributed to Anaxagoras (5th century BC), as reported by Cicero and Sextus Empiricus.

and uncertainty, leaving the words more unintelligible and the reader more at a loss? How else does it come about that princes are easily understood when they speak or write to their servants in their ordinary commands, but not when they speak to their people in their laws? And, as I remarked before, does it not often happen that a person of ordinary ability understands a text or a law perfectly well when he reads it, until he consults a commentator or goes to a lawyer? By the time that expert has finished explaining them, he has made the words mean either nothing at all or whatever he pleases.

3.10.13 *And ought not to pass for learning.*—I will not examine here whether any private interests of these professions have caused this. But I leave something to be considered. Mankind's concern is to know things as they are and to do what they ought, not to spend their lives talking about them or tossing words back and forth. Would it not be good for mankind, then, if the use of words were made plain and direct? Language was given us to improve knowledge and to be the bond of society. Would it not be good, I say, if it were not used to darken truth and unsettle people's rights, to raise mists, and to make both morality and religion unintelligible? Or at least, if this is going to happen, that it should not be thought learning or knowledge to do it?

TAKING WORDS FOR THINGS

Sects treat their own terms as real, and the word "matter" breeds disputes about something distinct from body.

3.10.14 *Taking them for things.*—Fourthly, another great abuse of words is taking them for things. This concerns all names in general to some degree, but it particularly affects the names of substances. Those most prone to it are the people who most confine their thoughts to some one system and give themselves up to a firm belief in the perfection of some received hypothesis. They come to be persuaded that the terms of that sect are so well suited to the nature of things that they correspond perfectly to their real existence. Who is there, brought up in the Peripatetic

philosophy, who does not think that the ten names under which the ten predicaments are ranked correspond exactly to the nature of things? Who is there of that school who is not persuaded that substantial forms, vegetative souls, abhorrence of a vacuum, intentional species, and so on, are something real? People have learned these words from their very first steps in knowledge, and have found their teachers and systems putting great weight on them. So they cannot give up the opinion that these words correspond to nature and represent something that really exists.[42] The Platonists have their soul of the world, and the Epicureans have the striving toward motion in their atoms when the atoms are at rest. There is hardly any sect in philosophy without its own set of terms that others do not understand. Human understanding is weak, and this gibberish serves very well to gloss over people's ignorance and cover their errors. Through familiar use among members of the same tribe, it comes to seem the most important part of language and the most meaningful of all terms. Suppose aerial and ethereal vehicles should ever come to be generally accepted somewhere, as that doctrine spreads. No doubt those terms would then make such an impression on people's minds as to establish them in a belief in the reality of such things, just as Peripatetic forms and intentional species have done in the past.[43]

3.10.15 *An example: matter.*—Careful reading of philosophical writers would amply show how easily names taken for things mislead the understanding, perhaps even in words hardly suspected of any such misuse. I shall give only one example, and a very familiar one. How many intricate disputes there have been about matter, as if there really were some such thing in nature, distinct from body! It is evident, after all, that the word matter stands for an idea distinct from the idea of body. If the ideas

42 The ten predicaments are Aristotle's ten categories. The rest are scholastic doctrines: vegetative souls (the nutritive souls of plants), nature's supposed "abhorrence" of empty space, and intentional species (likenesses of objects supposedly transmitted to the senses).

43 The doctrine, held by some Cambridge Platonists such as Henry More, that souls are joined to fine bodies ("vehicles") of air or ether.

these two terms stood for were exactly the same, either could be put for the other anywhere. But we see that, although it is proper to say there is one matter of all bodies, one cannot say there is one body of all matters. We commonly say one body is bigger than another, but it sounds harsh (and I think is never said) that one matter is bigger than another. Where does this come from, then? Namely from this. Matter and body are not really distinct: wherever there is the one, there is the other. Yet matter and body stand for two different conceptions, and one of them is incomplete and only a part of the other. For body stands for a solid, extended, shaped substance, and matter is only a partial and more confused conception of it. Matter seems to me to be used for the substance and solidity of body, leaving out its extension and shape. That is why, when we speak of matter, we always speak of it as one. In truth it explicitly contains nothing but the idea of a solid substance, which is everywhere the same, everywhere uniform. Since this is our idea of matter, we no more conceive of or speak of different matters in the world than of different solidities. We do conceive of and speak of different bodies, though, because extension and shape are capable of variation. But solidity cannot exist without extension and shape. So taking matter to be the name of something that really exists in that abstracted state has no doubt produced the obscure and unintelligible discourses and disputes about *materia prima* that have filled the heads and books of philosophers. I leave it to be considered how far this imperfection or abuse may affect a great many other general terms. This much, I think, I can at least say: we would have far fewer disputes in the world if words were taken for what they are, the signs of our ideas only, and not for things themselves.[44] When we argue about matter, or any similar term, we are really arguing only about the idea we express by that sound, and about whether that precise idea agrees with anything really existing in nature. If people would say what ideas they make their words stand for, there could not be half

44 *Materia prima*, "prime matter": in Aristotelian and scholastic philosophy, the formless matter underlying all bodies.

the obscurity or wrangling there now is, whether in searching for truth or in defending it.

3.10.16 *This makes errors lasting.*—Whatever inconvenience follows from this mistake about words, I am sure of this much: by constant and familiar use, words charm people into notions far removed from the truth of things. It would be hard to persuade anyone that the words used by his father or schoolmaster, the parish parson, or some reverend doctor signified nothing that really existed in nature. This is perhaps not the least of the reasons why people give up their mistakes with such difficulty, even in purely philosophical opinions, where they have no interest but truth. The words they have long been used to remain fixed in their minds, so it is no wonder that the wrong notions attached to them are not removed.

3.10.17 *Setting them for what they cannot signify.*—Fifthly, another abuse of words is putting them in place of things which they do not and cannot in any way signify. Take the general names of substances, of which we know only the nominal essences. When we put them into propositions and affirm or deny anything about them, we most commonly tacitly suppose, or intend, that they stand for the real essence of a certain sort of substances. When someone says gold is malleable, he means, and wants to suggest, something more than that what I call gold is malleable (though in truth his claim amounts to no more than that). He wants it understood that gold, that is, what has the real essence of gold, is malleable. That amounts to saying that malleability depends on, and is inseparable from, the real essence of gold. But he does not know what that real essence consists in. So the connection that malleability has in his mind is not really with an essence he does not know, but only with the sound gold that he puts in its place. Thus when we say that *animal rationale* is a good definition of a man and *animal implume bipes latis unguibus* is not, it is plain that we suppose the name man in this case to stand for the real essence of a species. We mean that "a rational animal" describes that real essence better than "a two-legged animal with broad nails and without feathers." Otherwise, why

could Plato not just as properly make the word ἄνθρωπος, or man, stand for his complex idea, made up of the idea of a body distinguished from others by a certain shape and other outward appearances? Aristotle made the complex idea to which he gave the name ἄνθρωπος, or man, consist of body and the faculty of reasoning joined together. Why should Plato be any less entitled to his idea, unless the name ἄνθρωπος, or man, were supposed to stand for something other than what it signifies, and to be put in place of something other than the idea a person professes to express by it?

3.10.18 *For example, putting them for the real essences of substances.* —It is true that the names of substances would be much more useful, and propositions made with them much more certain, if the ideas in our minds that those words signified were the real essences of substances. It is for lack of those real essences that our words convey so little knowledge or certainty when we discuss substances. So the mind, to remove that imperfection as far as it can, secretly supposes that the words stand for a thing having that real essence, as if this brought it somewhat closer to it. In truth the word man or gold signifies nothing but a complex idea of properties united together in one sort of substances. Yet hardly anyone uses these words without often supposing that each name stands for a thing having the real essence on which those properties depend. This is so far from lessening the imperfection of our words that it adds to it by a plain abuse. For we try to make the words stand for something that is not in our complex idea, and so something that the name we use can in no way be the sign of.

3.10.19 *Hence we think that no change in our idea of a substance changes the species.*—This shows us why, in mixed modes, if any of the ideas that make up the complex one is left out or changed, it is granted to be another thing, that is, of another species. This is plain in chance-medley, manslaughter, murder, parricide, and so on. The reason is that the complex idea signified by that name is the real essence as well as the nominal one, and there is no secret reference of that name to any essence but that one.

With substances it is different.[45] Take what is called gold. One person puts into his complex idea what another leaves out, and vice versa. Yet people do not usually think the species is changed as a result. In their minds they secretly refer that name to a real, unchangeable essence of an existing thing, on which those properties depend, and suppose the name attached to it. Suppose someone adds to his complex idea of gold the ideas of fixedness and solubility in aqua regia, which he did not include before. He is not thought to have changed the species. He is thought only to have a more perfect idea, by adding another simple idea that is in fact always joined with the others that made up his former complex idea. But this reference of the name to a thing of which we had no idea is so far from helping that it only entangles us further in difficulties. The word gold stands for a more or less perfect collection of simple ideas, and in that role it serves well enough to designate that sort of body in everyday discussion. By this tacit reference to the real essence of that species of bodies, however, it comes to have no meaning at all. It is put for something of which we have no idea at all, and so it can signify nothing at all when the body itself is absent. It may be thought the same thing, but if well considered it will be found quite different to argue about gold in name and about a portion of the body itself, for example a piece of gold leaf laid before us, even though in discourse we are obliged to substitute the name for the thing.

3.10.20 *The cause of the abuse: a supposition that nature always works regularly.*—What I think strongly disposes people to substitute their names for the real essences of species is the supposition mentioned before. It is supposed that nature works regularly in producing things, and sets the boundaries of each species by giving exactly the same real internal constitution to each individual we rank under one general name. But anyone who observes their different qualities can hardly doubt that many individuals called by the same name are as different from one another in their internal constitution as several that are ranked

45 Chance-medley: in English law, a killing by accident in a sudden fight.

under different specific names. Still, the supposition that the same precise internal constitution always goes with the same specific name makes people eager to take those names as representing those real essences. In fact the names signify nothing but the complex ideas people have in their minds when they use them. So, if I may put it this way, they signify one thing and are supposed to stand for, or put in place of, another. Used like this, they cannot help causing a great deal of uncertainty in people's discussions. This is especially true of those who have thoroughly absorbed the doctrine of substantial forms, and firmly imagine that these forms determine and distinguish the various species of things.

3.10.21 *This abuse contains two false suppositions.*—Making our names stand for ideas we do not have, or (which comes to the same thing) for essences we do not know, is perverse and absurd, since in effect it makes our words the signs of nothing. Yet anyone who reflects even a little on the use people make of their words can see that nothing is more common. Suppose someone asks whether this or that thing he sees, let it be a drill or a severely malformed fetus, is a man or not. The question plainly is not whether that particular thing agrees with his complex idea expressed by the name man. It is whether the thing has in it the real essence of a species of things, which he supposes his name man to stand for. This way of using the names of substances contains the following false suppositions.

First, that there are certain precise essences according to which nature makes all particular things, and by which they are distinguished into species. It is beyond doubt that everything has a real constitution, by which it is what it is and on which its sensible qualities depend. But I think it has been proved that this does not make the distinction of species as we rank them, nor the boundaries of their names.

Secondly, it also tacitly suggests that we have ideas of these supposed essences. What else would be the point of inquiring whether this or that thing has the real essence of the species man, unless we supposed that such a specific essence was

known? Yet that is utterly false. So any use of names that would make them stand for ideas we do not have is bound to cause great disorder in discussions and reasonings about them, and to be a great inconvenience in our communication by words.

3.10.22 *A supposition that words have a certain and evident signification.*—Sixthly, there remains one more abuse of words, more general than the others, though perhaps less noticed. People attach certain ideas to words by long and familiar use. They are then apt to imagine so close and necessary a connection between the names and the meaning they use them in that they readily suppose no one can fail to understand what they mean. So, they think, one ought to accept the words delivered without question, as if it were beyond doubt that the speaker and hearer necessarily had the same precise ideas when using those commonly received sounds. They presume that when they have used a term in discourse, they have, as it were, set the very thing they are talking about before others. They likewise take other people's words as naturally standing for just what they themselves are used to applying them to. So they never trouble themselves to explain their own meaning, or to understand clearly anyone else's. Noise and wrangling commonly follow, without improvement or information. People take words to be the constant, regular marks of agreed notions, when in truth they are nothing more than the voluntary and unsteady signs of their own ideas. And yet people think it strange if someone in a discussion, or in a dispute (where it is often absolutely necessary), occasionally asks what their terms mean. Still, the arguments one can observe every day in conversation make it evident that there are few names of complex ideas that any two people use for exactly the same collection. It is hard to name a word that would not be a clear instance of this. Life is a term, and none is more familiar. Almost anyone would take it as an insult to be asked what he meant by it. And yet suppose the question comes up whether a plant that lies ready-formed in the seed has life, or whether the embryo in an egg before incubation, or a man in a faint without sense or motion, is alive or not. It is then easy to

see that a clear, distinct, settled idea does not always accompany the use of so familiar a word as life. People do ordinarily have some rough and confused conceptions to which they apply the common words of their language, and such a loose use of their words serves them well enough in ordinary conversation and affairs. But this is not enough for philosophical inquiries. Knowledge and reasoning require precise, determinate ideas. People should not be so tiresomely dull as to be unable to understand what others say without demanding an explanation of their terms. Nor should they be so annoyingly critical as to correct others in the use of the words they receive from them. But where truth and knowledge are at stake, I do not see what fault there can be in asking for an explanation of words whose sense seems doubtful. Nor do I see why anyone should be ashamed to admit that he does not know in what sense another person uses his words, since the only way he can know it for certain is to be told. This abuse of taking words on trust has spread nowhere so far, or with such bad effects, as among men of letters. The multiplication and stubbornness of disputes, which have laid the intellectual world so waste, are owing to nothing more than to this bad use of words. It is generally believed that the many volumes and the variety of controversies that distract the world contain a great diversity of opinions. Yet the most I can find that the contending learned men of different parties do in their arguments with one another is to speak different languages. I am inclined to think that when any of them set aside terms and think about things, and know what they think, they all think the same, though what they want may perhaps be different.

3.10.23 *The ends of language:* 1. *to convey our ideas.*—To conclude this consideration of the imperfection and abuse of language: the ends of language in our discourse with others are chiefly these three. First, to make one person's thoughts or ideas known to another. Secondly, to do this as easily and quickly as possible. Thirdly, to convey the knowledge of things by this means. Language is either abused or deficient when it fails in any of these three.

First, words fail in the first of these ends, and do not lay one person's ideas open to another's view, in three cases. 1. When people have names in their mouths without any determinate ideas in their minds for those names to be the signs of. 2. When they apply the commonly received names of a language to ideas to which the common use of that language does not apply them. 3. When they apply them very unsteadily, making them stand now for one idea and presently for another.

3.10.24 *To do it with quickness.*—Secondly, people fail to convey their thoughts with all possible quickness and ease when they have complex ideas without any distinct names for them. Sometimes this is the fault of the language itself, which does not yet have a sound applied to such a meaning. Sometimes it is the fault of the person, who has not yet learned the name for the idea he wants to show another.

3.10.25 *Thereby to convey the knowledge of things.*—Thirdly, no knowledge of things is conveyed by people's words when their ideas do not agree with the reality of things. This defect originates in our ideas, which do not conform to the nature of things as closely as attention, study, and application might make them. Yet it extends to our words too, when we use them as signs of real beings that never had any reality or existence.

3.10.26 *How men's words fail in all these.*—First, someone who has the words of a language, without distinct ideas in his mind to which he applies them, only makes a noise without any sense or meaning, so far as he uses them in discourse. However learned he may seem from his use of hard words or learned terms, he is not much further advanced in knowledge by them than someone would be in learning who had nothing in his study but the bare titles of books, without having their contents. For all such words, however they are put into discourse, whether by the correct construction of grammatical rules or by the harmony of well-turned sentences, still amount to nothing but bare sounds, and nothing else.

3.10.27 Secondly, someone who has complex ideas without particular names for them would be no better off than a bookseller

who had volumes in his warehouse lying there unbound and without titles. He could make them known to others only by showing the loose sheets, and could communicate them only sheet by sheet. This man is hindered in his discourse for lack of words to communicate his complex ideas. He is therefore forced to make them known by listing the simple ideas that compose them, and so he often has to use twenty words to express what another man signifies in one.

3.10.28 Thirdly, someone who does not consistently put the same sign for the same idea, but uses the same words sometimes in one meaning and sometimes in another, deserves to pass in the schools and in conversation for as honest a man as the one who, in the market and the exchange, sells several different things under the same name.

3.10.29 Fourthly, someone who applies the words of a language to ideas different from those to which the common use of that country applies them will not be able to convey much of his understanding to others by such words without defining his terms, however full of truth and light that understanding may be. For although the sounds are familiar and easily enter the ears of those who are used to them, they stand for ideas other than the ones they are usually attached to and usually call up in the minds of the hearers. So they cannot make known the thoughts of the man who uses them this way.

3.10.30 Fifthly, someone who has imagined substances that never existed, and has filled his head with ideas that do not correspond at all to the real nature of things, and yet gives them settled and defined names, may fill his discourse, and perhaps another man's head, with the fantastic imaginings of his own brain. But he will be very far from advancing one bit in real and true knowledge by doing so.

3.10.31 Someone who has names without ideas lacks meaning in his words and speaks only empty sounds. Someone who has complex ideas without names for them lacks freedom and speed in his expressions, and is forced to use roundabout phrases. Someone who uses his words loosely and unsteadily will either

be ignored or not understood. Someone who applies his names to ideas different from their common use lacks propriety in his language and speaks gibberish. And someone who has ideas of substances that disagree with the real existence of things lacks, to that extent, the materials of true knowledge in his understanding, and has chimeras instead.

3.10.32 *How in substances.*—In our notions of substances we are liable to all the preceding drawbacks. For example: 1. Someone who uses the word "tarantula" without having any image or idea of what it stands for pronounces a good word, but so long as that is so, he means nothing at all by it. 2. Someone who, in a newly discovered country, sees various kinds of animals and plants that he did not know before may have ideas of them as true as his ideas of a horse or a stag. But he can speak of them only by description, until he either adopts the names the inhabitants call them by or gives them names himself. 3. Someone who uses the word "body" sometimes for pure extension, and sometimes for extension and solidity together, will talk very misleadingly. 4. Someone who gives the name "horse" to the idea that common usage calls "mule" talks improperly and will not be understood. 5. Someone who thinks that the name "centaur" stands for some real being deceives himself, and mistakes words for things.

3.10.33 *How in modes and relations.*—In modes and relations we are generally liable only to the first four of these drawbacks. Namely: 1. I may have the names of modes in my memory, such as "gratitude" or "charity," and yet have no precise ideas attached to those names in my thoughts. 2. I may have ideas and not know the names that belong to them. For example, I may have the idea of a man drinking until his complexion and his mood change, until his tongue stumbles, his eyes look red, and his feet fail him, and yet not know that this is to be called drunkenness. 3. I may have the ideas of virtues or vices, and the names too, but apply them wrongly. For example, I may apply the name "frugality" to the idea that others call and signify by the sound "covetousness." 4. I may use any of those names

inconsistently. 5. But in modes and relations I cannot have ideas that disagree with the existence of things. For modes are complex ideas made by the mind at will, and a relation is only a way of considering or comparing two things together, and so it too is an idea of my own making. These ideas can hardly be found to disagree with anything that exists, since they are not in the mind as copies of things regularly made by nature, nor as properties flowing inseparably from the internal constitution or essence of some substance. They are, as it were, patterns lodged in my memory, with names attached to them, by which to name actions and relations as these come into existence. The mistake is usually that I give a wrong name to my conceptions. So, since I use words in a different sense from other people, I am not understood, and I am thought to have wrong ideas of things when I have only given them wrong names. Only if I put inconsistent ideas together in my ideas of mixed modes or relations do I also fill my head with chimeras. For such ideas, if examined carefully, cannot even exist in the mind, much less can any real being ever be named from them.

FIGURATIVE SPEECH

Outside entertainment, the figurative arts of rhetoric serve only to mislead the judgment.

3.10.34 *Figurative speech also an abuse of language.*—Sixthly, since wit and fancy are more welcome in the world than dry truth and real knowledge, figurative speech and allusion will hardly be accepted as an imperfection or abuse of language. I admit that in discourses where we look for pleasure and delight rather than information and improvement, such ornaments borrowed from them can hardly count as faults. But if we are to speak of things as they are, we must grant that all the art of rhetoric, apart from order and clearness, and all the artificial and figurative uses of words that eloquence has invented, serve for nothing but to insinuate wrong ideas, move the passions, and so mislead the judgment. They are, in fact, perfect cheats. And so, however

praiseworthy or acceptable oratory may make them in speeches and popular addresses, they are certainly to be avoided entirely in all discourses that claim to inform or instruct. Where truth and knowledge are concerned, they can only be thought a great fault, either of the language or of the person who uses them. It would be superfluous to note here what they are and how various; the books of rhetoric, which abound in the world, will instruct those who want to be informed. I can only observe how little the preservation and improvement of truth and knowledge is the care and concern of mankind, since the arts of fallacy are endowed and promoted. It is evident how much men love to deceive and be deceived, since rhetoric, that powerful instrument of error and deceit, has its established professors, is publicly taught, and has always been held in great esteem. And I do not doubt that it will be thought great boldness, if not brutality, on my part to have said this much against it. Eloquence, like the fair sex, has charms too powerful to allow anyone ever to speak against it. And it is useless to find fault with those arts of deceiving in which men take pleasure in being deceived.

REMEDIES FOR THE IMPERFECTIONS OF WORDS

Locke proposes rules: use no word without an idea, make ideas determinate, keep to common use, and define terms.

3.11.1 *They are worth seeking.*—We have seen at length above the natural imperfections of languages and those that have been added to them. Speech is the great bond that holds society together, and the common channel through which the improvements of knowledge are passed from one man, and one generation, to another. So it well deserves our most serious thought to consider what remedies can be found for the drawbacks mentioned above.

3.11.2 *Are not easy.*—I am not so vain as to think that anyone can undertake a perfect reform of the languages of the world, or even of his own country, without making himself ridiculous. To require that men should always use their words in the same

sense, and only for determined and uniform ideas, would be to expect all men to have the same notions and to talk of nothing but what they have clear and distinct ideas of. No one can expect this unless he is vain enough to imagine he can persuade men to be either very knowledgeable or very silent. And someone must know very little of the world if he thinks that a ready tongue goes only with a good understanding, or that how much or how little men talk is in proportion only to what they know.

3.11.3 *But yet necessary to philosophy.*—The market and the exchange must be left to their own ways of talking, and gossip must not be robbed of its ancient privilege. The schools and men of argument might perhaps take it badly if anything were proposed that would shorten their disputes or reduce their number. Even so, I think that those who seriously claim to search for or defend truth should consider themselves obliged to learn how to express themselves without the obscurity, doubtfulness, or equivocation to which men's words are naturally liable if care is not taken.

3.11.4 *Misuse of words the great cause of errors.*—For anyone who carefully considers the errors and obscurity, the mistakes and confusion, spread in the world by a bad use of words will find some reason to doubt whether language, as it has been used, has done more to advance or to hinder knowledge among mankind. How many people are there who, when they mean to think about things, fix their thoughts only on words, especially when they turn their minds to moral matters? Who can be surprised, then, at the result of such contemplations and reasonings about little more than sounds, while the ideas attached to them are very confused and very unsteady, or perhaps not there at all? Who can be surprised, I say, that such thoughts and reasonings end in nothing but obscurity and mistake, without any clear judgment or knowledge?

3.11.5 *Obstinacy.*—Men suffer this drawback from a bad use of words in their own private meditations. But the disorders that follow from it in conversation, discourse, and argument with others are much more obvious. For language is the great chan-

nel through which men pass their discoveries, reasonings, and knowledge from one to another. So someone who misuses it, though he does not corrupt the fountains of knowledge, which are in things themselves, still does all he can to break or block the pipes through which it is distributed for the public use and benefit of mankind. Someone who uses words without any clear and steady meaning—what does he do but lead himself and others into errors? And someone who does it on purpose should be regarded as an enemy of truth and knowledge. And yet who can be surprised that all the sciences and branches of knowledge have been so overloaded with obscure and equivocal terms, and with meaningless and doubtful expressions, which can make even the most attentive or sharp-sighted little or no more knowledgeable or orthodox? For subtlety, in those who profess to teach or defend truth, has passed so much for a virtue. It is a virtue, indeed, that consists for the most part in nothing but the fallacious and deceptive use of obscure or misleading terms, and it is fit only to make men more conceited in their ignorance and more obstinate in their errors.

3.11.6 *And wrangling.*—Let us look into books of controversy of any kind. There we shall see that the effect of obscure, unsteady, or equivocal terms is nothing but noise and wrangling about sounds, which neither convinces nor improves anyone's understanding. For if the speaker and hearer have not agreed on the idea the words stand for, the argument is not about things but about names. Whenever such a word, whose meaning has not been settled between them, comes into use, the only thing their understandings agree on is the bare sound, since the things they are thinking of at that moment, as expressed by that word, are quite different.

3.11.7 *Instance, bat and bird.*—Whether a bat is a bird or not is not a question about whether a bat is something other than what it really is, or has qualities other than those it really has; it would be extremely absurd to doubt that. The question is one of two kinds. 1. It may be between people who admit that they have only imperfect ideas of one or both of the sorts of things these

names are supposed to stand for. Then it is a real inquiry into the names "bird" and "bat," meant to make their still imperfect ideas more complete, by examining whether all the simple ideas that they both combine under the name "bird" are to be found in a bat. But this is a question only for inquirers (not disputers), who neither affirm nor deny, but examine. Or, 2. It is a question between disputants, one of whom affirms and the other denies that a bat is a bird. Then the question is merely about the meaning of one or both of these words. Since the two of them do not have the same complex ideas to which they give these two names, one holds and the other denies that the one name can be affirmed of the other. If they agreed on the meaning of these two names, it would be impossible for them to dispute about them. For once that was settled between them, they would immediately and clearly see whether or not all the simple ideas of the more general name "bird" were found in the complex idea of a bat; and so there could be no doubt whether a bat was a bird or not. And here I ask that it be considered and carefully examined whether most of the disputes in the world are not merely verbal, and about the meaning of words. And I ask whether, if the terms they are conducted in were defined, and their meaning reduced (as it must be wherever they mean anything) to determined collections of the simple ideas they do or should stand for, those disputes would not end of themselves and immediately vanish. I leave it to others, then, to consider what the learning of disputation amounts to, and how well those people are employed, for their own benefit or anyone else's, whose whole business is the vain display of sounds; that is, those who spend their lives in disputes and controversies. When I see any of those combatants strip all his terms of ambiguity and obscurity (which anyone can do with the words he himself uses), I shall think him a champion of knowledge, truth, and peace, and not the slave of vainglory, ambition, or a party.

3.11.8 To remedy the defects of speech mentioned above to some degree, and to prevent the drawbacks that follow from them, I think it may be useful to observe the following rules,

until someone better able to do so thinks it worth his while to consider this matter more thoroughly and favors the world with his thoughts on it.

1. *Remedy, to use no word without an idea.*—First, a man should take care to use no word without a meaning, and no name without an idea for which he makes it stand. This rule will not seem altogether unnecessary to anyone who takes the trouble to recall how often he has met with words such as "instinct," "sympathy," and "antipathy," etc., in other people's talk, used in such a way that he could easily conclude that those who used them had no ideas in their minds to which they applied them, but spoke them only as sounds, which on such occasions usually served in place of reasons. Not that these words and others like them do not have perfectly proper meanings in which they may be used. But since there is no natural connection between any words and any ideas, these and any other words may be learned by rote, and spoken or written by men who have no ideas in their minds to which they have attached them and for which they make them stand. Yet it is necessary that they should have such ideas, if men are to speak intelligibly even to themselves alone.

3.11.9 2. *To have distinct ideas annexed to them in modes.*—Secondly, it is not enough that a man uses his words as signs of some ideas. The ideas he attaches them to must be clear and distinct if they are simple, and determinate if they are complex; that is, a precise collection of simple ideas settled in the mind, with that sound attached to it as the sign of that precise, determined collection and no other. This is very necessary in the names of modes, and especially in moral words. Since these have no settled objects in nature from which their ideas are taken as from their original, they tend to be very confused. "Justice" is a word in everyone's mouth, but most commonly with a very undetermined, loose meaning. And it will always be so unless a man has in his mind a distinct grasp of the component parts that the complex idea consists of. And if it is compounded of further compounds, he must be able to keep breaking it

down until he finally reaches the simple ideas that make it up. Unless this is done, a man makes a bad use of the word, whether it is "justice," for example, or any other. I do not say that a man needs to stop and recollect, and carry out this analysis in full, every time the word "justice" comes his way. But at least this much is necessary: that he has examined the meaning of that name, and settled the idea of all its parts in his mind, well enough that he can do it whenever he wants. Suppose someone makes his complex idea of justice to be such treatment of another's person or goods as is in accordance with law. If he does not have a clear and distinct idea of what law is, which is part of his complex idea of justice, it is plain that his idea of justice itself will be confused and imperfect. This exactness may be judged very troublesome, and so most men will think they may be excused from settling the complex ideas of mixed modes so precisely in their minds. Yet I must say that until this is done, it is no wonder that they have a great deal of obscurity and confusion in their own minds, and a great deal of wrangling in their discussions with others.

3.11.10 *Distinct and conformable in substances.*—For a right use of the names of substances, something more is required than merely determined ideas. In these, the names must also conform to things as they exist; but I shall have occasion to speak of this more fully shortly. This exactness is absolutely necessary in inquiries after philosophical knowledge and in controversies about truth. It would be good if it extended to ordinary conversation and the everyday business of life as well, but I think that can hardly be expected. Common notions suit common talk, and both, though confused enough, serve pretty well for the market and the village fair. Merchants and lovers, cooks and tailors, have words with which to carry on their ordinary business; and so, I think, might philosophers and disputants too, if they had a mind to understand and to be clearly understood.

3.11.11 3. *Propriety.*—Thirdly, it is not enough that men have ideas, determined ideas, for which they make these signs stand. They must also take care to apply their words, as nearly as pos-

sible, to the ideas that common use has attached them to. For words, especially in languages already formed, are no one's private property but the common measure of trade and communication. So it is not for anyone to change at will the stamp under which they circulate, or to alter the ideas they are attached to; or at least, when it is necessary to do so, he is bound to give notice of it. Men's intention in speaking is, or at least should be, to be understood. That cannot happen, where men do not follow common use, without frequent explanations, questions, and other such inconvenient interruptions. Propriety of speech is what lets our thoughts into other men's minds with the greatest ease and advantage, and so it deserves some part of our care and study, especially with moral words. The proper meaning and use of terms is best learned from those who, in their writings and conversation, appear to have had the clearest notions, and to have applied their terms to them with the most exact choice and fitness. This way of using one's words according to the propriety of the language does not always have the good fortune to be understood. But most commonly it leaves the blame on the person who is so unskilled in the language he speaks that he does not understand it when it is used as it should be.

3.11.12 4. *To make known their meaning.*—Fourthly, common use has not attached a meaning to words so visibly that men always know for certain what they precisely stand for. And men, as their knowledge improves, come to have ideas different from the common, ordinarily received ones, for which they must either make new words (which men seldom dare to do, for fear of being thought guilty of affectation or novelty) or else use old words in a new meaning. Therefore, after observing the preceding rules, it is sometimes necessary to state the meaning of words in order to fix it. This is so where common use has left it uncertain and loose (as it has in most names of very complex ideas), or where the term is very important to the discussion, the one on which it mainly turns, and is open to any doubt or mistake.

3.11.13 *And that three ways.*—As the ideas men's words stand for are of different sorts, so the way of making known the ideas they stand for, when there is occasion, is also different. For although defining is thought to be the proper way to make known the proper meaning of words, there are some words that cannot be defined, just as there are others whose precise meaning cannot be made known except by definition; and perhaps there is a third kind, which shares something of both the others. We shall see this in the names of simple ideas, modes, and substances.

3.11.14 1. *In simple ideas, by synonymous terms, or showing.*—First, when a man uses the name of some simple idea and sees that it is not understood, or is in danger of being mistaken, he is obliged by the laws of candor and by the purpose of speech to state his meaning and make known what idea he makes it stand for. As has been shown, this cannot be done by definition. So when a synonym fails to do it, only one of the following ways is left. First, sometimes naming the subject in which that simple idea is found will make its name understood by those who are acquainted with that subject and know it by that name. So to make a countryman understand what the color "feuille-morte" means, it may be enough to tell him that it is the color of withered leaves falling in autumn. Secondly, the only sure way of making known the meaning of the name of a simple idea is to present to his senses the subject that can produce it in his mind, and make him actually have the idea that the word stands for.

3.11.15 2. *In mixed modes, by definition.*—Secondly, mixed modes, especially those belonging to morality, are for the most part combinations of ideas that the mind puts together by its own choice, and of which standing patterns are not always found existing. So the meaning of their names cannot be made known by any showing, as those of simple ideas can. But in compensation, they can be defined perfectly and exactly. For since they are combinations of several ideas that the human mind has put together arbitrarily, without reference to any archetypes, men can, if they wish, know exactly the ideas that go into each combination. And so they can both use these words in a certain and

undoubted meaning and state perfectly what they stand for when there is occasion. If this were well considered, it would put great blame on those who do not make their discussions of moral matters very clear and distinct. For since the precise meaning of the names of mixed modes—or, what is the same thing, the real essence of each species—can be known, these being made not by nature but by man, it is great negligence and perversity to discuss moral matters with uncertainty and obscurity. That is more pardonable in dealing with natural substances, where doubtful terms can hardly be avoided, for quite the opposite reason, as we shall see shortly.

MORALITY CAPABLE OF DEMONSTRATION

Because moral words stand for ideas we make ourselves, morality can be as demonstrable as mathematics.

3.11.16 *Morality capable of demonstration.*—It is on this basis that I venture to think that morality is capable of demonstration, as well as mathematics. For the precise real essence of the things that moral words stand for can be perfectly known, and so the congruity or incongruity of the things themselves can be discovered with certainty; and in this perfect knowledge consists. Nor let anyone object that the names of substances must often be used in morality, as well as those of modes, and that obscurity will arise from this. For when substances come into moral discussions, their various natures are not so much inquired into as taken for granted. For example, when we say that man is subject to law, we mean nothing by "man" but a bodily, rational creature. What the real essence or other qualities of that creature are is not considered at all in this case. And so, however debatable it may be among natural philosophers whether an infant or a severely intellectually disabled child is a man in the physical sense, it does not concern the moral man at all, as I may call him, which is this fixed, unchangeable idea: a bodily, rational being. For if there were a monkey, or any other creature, to be found that had the use of reason to such a degree

as to be able to understand general signs and draw inferences about general ideas, he would no doubt be subject to law, and in that sense be a man, however much he differed in shape from others of that name. The names of substances, if they are used as they should be, can no more disturb moral discussions than they disturb mathematical ones. There, if the mathematician speaks of a cube or globe of gold, or of any other body, he has his clear, settled idea, which does not vary, even though he may mistakenly apply it to a particular body to which it does not belong.

3.11.17 *Definitions can make moral discourses clear.*—I have mentioned this here in passing to show how important it is for men to define their words when there is occasion, in their names of mixed modes and therefore in all their moral discussions, since in this way moral knowledge can be brought to such great clearness and certainty. And it must be a great lack of candor (to say no worse of it) to refuse to do so. For a definition is the only way by which the precise meaning of moral words can be known, and yet it is a way by which their meaning can be known with certainty, leaving no room for any dispute about it. So the negligence or perversity of mankind cannot be excused if their discussions of morality are not much clearer than those in natural philosophy. For they are about ideas in the mind, none of which is false or ill-matched, since they have no external beings as the archetypes to which they are referred and with which they must correspond. It is far easier for men to form in their minds an idea that will be the standard to which they give the name "justice," so that all actions that agree with the pattern so made will go under that name, than, having seen Aristides, to form an idea that will be exactly like him in all respects. For he is as he is, whatever idea men choose to make of him. For the first, they need only know the combination of ideas that has been put together in their own minds. For the second, they must inquire

into the whole nature, the obscure hidden constitution, and the various qualities of a thing existing outside them.[46]

3.11.18 *And is the only way.*—Another reason that makes defining mixed modes, especially moral words, so necessary is the one I mentioned a little earlier: namely, that it is the only way by which the meaning of most of them can be known with certainty. For the ideas they stand for are for the most part ones whose component parts nowhere exist together, but are scattered and mixed with others. It is the mind alone that collects them and gives them the unity of one idea. And it is only by words, listing the several simple ideas the mind has united, that we can make known to others what their names stand for. In this case the senses give us no help, by presenting sensible objects, in showing the ideas that names of this kind stand for, as they often do with the names of sensible simple ideas, and to some degree also with those of substances.

DEFINING THE NAMES OF SUBSTANCES

Substance names need both showing and defining, and should conform to things as natural history finds them.

3.11.19 3. *In substances, by showing and defining.*—Thirdly, to explain the meaning of the names of substances, as they stand for the ideas we have of their distinct species, both of the ways already mentioned, namely showing and defining, must in many cases be used. For in each sort there are usually some leading qualities to which we suppose the other ideas that make up our complex idea of that species are attached. We readily give the specific name to any thing in which that characteristic mark is found, which we take to be the most distinguishing idea of that species. These leading or (as I may call them) characteristic ideas are, in the sorts of animals and plants, mostly shape (as has been noted before, Book III, Chapter 6, Section 29, and

46 Aristides: Athenian statesman and general of the fifth century BC, known as "the Just."

Chapter 9, Section 15); in inanimate bodies, color; and in some, both together. Now,

3.11.20 *Ideas of the leading qualities of substances are best got by showing.*—These leading sensible qualities are the ones that make up the chief ingredients of our specific ideas, and so the most noticeable and invariable part of the definitions of our specific names, as they are applied to the sorts of substances that come within our knowledge. For although the sound "man" is, in its own nature, as fit to signify a complex idea made up of animality and rationality united in the same subject as to signify any other combination, still, when it is used as a mark for a sort of creatures we count as our own kind, perhaps the outward shape needs to be taken into our complex idea signified by the word "man" as much as anything else we find in it. And so it will not be easy to show why Plato's "*animal implume bipes latis unguibus*" ("a featherless two-footed animal with broad nails") should not be a good definition of the name "man," standing for that sort of creatures. For it is the shape, as the leading quality, that seems to determine that species more than a faculty of reasoning, which does not appear at first, and in some never appears at all. And if this is not granted, I do not know how those who kill what we call malformed births because of an unusual shape, without knowing whether they have a rational soul or not, can be excused from murder. For that can no more be discerned in a well-formed infant than in a malformed one at the moment of birth. And who has told us that a rational soul can inhabit no dwelling unless it has exactly that sort of front, or can join itself to and animate no kind of body except one of exactly that outward structure?

3.11.21 Now these leading qualities are best made known by showing, and can hardly be made known any other way. For the shape of a horse or a cassowary will be only roughly and imperfectly impressed on the mind by words; the sight of the animals does it a thousand times better. And the idea of the particular color of gold cannot be got from any description of it, but only by frequently exercising the eyes on it. This is evident in those

who are used to this metal: they will often tell true from counterfeit, and pure from adulterated, by sight, where others (who have eyes as good, but have not through practice acquired the precise, fine idea of that peculiar yellow) will not perceive any difference. The same may be said of those other simple ideas that are peculiar in their kind to some substance, for which precise ideas there are no special names. The particular ringing sound that gold has, distinct from the sound of other bodies, has no particular name attached to it, any more than the particular yellow that belongs to that metal.

3.11.22 *The ideas of their powers best by definition.*—But many of the simple ideas that make up our specific ideas of substances are powers that are not obvious to our senses in things as they ordinarily appear. So part of the meaning of our names of substances will be better made known by listing those simple ideas than by showing the substance itself. For someone who, in addition to the yellow shining color of gold that he got by sight, also gets from my listing them the ideas of great ductility, fusibility, fixedness, and solubility in aqua regia, will have a more perfect idea of gold than he can have by seeing a piece of gold and so impressing only its obvious qualities on his mind. But if the formal constitution of this shining, heavy, ductile thing (from which all these properties of it flow) lay open to our senses, as the formal constitution or essence of a triangle does, the meaning of the word "gold" could be fixed as easily as that of "triangle."

3.11.23 *A reflection on the knowledge of spirits.*—From this we can see how much the foundation of all our knowledge of bodily things lies in our senses. We have no notion, no idea at all, of how spirits separate from bodies know these things, though their knowledge and ideas of them are certainly far more perfect than ours. The whole extent of our knowledge or imagination reaches no further than our own ideas, and these are limited to our ways of perceiving. Still, there is no doubt that spirits of a higher rank than those immersed in flesh may have ideas of the radical constitution of substances as clear as the idea we

have of a triangle. They may therefore perceive how all the properties and operations of substances flow from that constitution. But how they come by that knowledge is beyond our conception.

3.11.24 4. *Ideas of substances must also conform to things.*—Definitions will serve to explain the names of substances as they stand for our ideas. But they still leave those names greatly imperfect as they stand for things. Our names of substances are not used merely for our ideas. They are used ultimately to represent things, and so they are put in the place of things. Their signification must therefore agree with the truth of things as well as with men's ideas. So with substances we must not always rest content with the ordinary complex idea that is commonly accepted as the signification of the word. We must go a little further and inquire into the nature and properties of the things themselves, and in this way perfect our ideas of their distinct species as far as we can. Otherwise we must learn them from people who are used to that sort of thing and experienced in it. Their names are meant to stand for the collections of simple ideas that really exist in the things themselves, as well as for the complex idea in other men's minds that the names stand for in their ordinary sense. To define these names rightly, therefore, we must look into natural history and find out the properties of things with care and examination. To avoid trouble in discussions and arguments about natural bodies and substantial things, it is not enough to learn from the usage of the language the common idea to which each word is applied, which is confused or very imperfect, and then to hold the words to that idea when we use them. We must also acquaint ourselves with the history of that sort of thing, and so correct and settle the complex idea belonging to each specific name. And in talking with others, if we find that they misunderstand us, we ought to say what complex idea we make the name stand for. This is all the more necessary for everyone who searches after knowledge and philosophical truth, because children are taught words while they have only imperfect notions of things. They apply the words at random

and without much thought, and they seldom frame determinate ideas for them to signify. This habit is easy and serves well enough for the ordinary business of life and conversation, so they tend to keep it up when they are grown. They begin at the wrong end. They learn the words first and learn them perfectly, and only afterward, and very superficially, do they form the notions to which they apply them. This is how it happens that men who speak their country's language properly—that is, according to its rules of grammar—still speak very improperly of things themselves. In their arguments with one another they make only small progress in discovering useful truths and in gaining knowledge of things as they are to be found in themselves, and not in our imaginations; and for the improvement of our knowledge it matters little what they are called.

3.11.25 *Not easy to make them so.*—It would therefore be desirable for men who are versed in natural inquiries, and acquainted with the various sorts of natural bodies, to set down the simple ideas in which they observe the individuals of each sort to agree constantly. This would remedy much of the confusion that comes from different people applying the same name to a collection of sensible qualities. The collection is larger or smaller in proportion as each person is more or less acquainted with the qualities of a sort of things that fall under one name, or more or less exact in examining them. But a dictionary of this kind would in effect contain a natural history. It would need too many hands, and too much time, expense, labor, and insight, ever to be hoped for. Until it is done, we must content ourselves with definitions of the names of substances that explain the sense in which men use them. And it would be good if people would give us that much where there is occasion. Yet this is not usually done. Instead men talk to one another, and dispute in words whose meaning they have not agreed on. They do so because they mistakenly suppose that the significations of common words are firmly established, that the precise ideas the words stand for are perfectly known, and that it is a shame to be ignorant of them. Both these suppositions are false. No names of

common complex ideas have significations so settled and determinate that they are always used for the same precise ideas. Nor is it a shame for a man to lack certain knowledge of anything when he has no access to the necessary ways of attaining it. So it is no discredit not to know what precise idea a sound stands for in another man's mind, unless he declares it to me in some other way than just using that sound. Without such a declaration there is no other way to know it for certain. It is true that the need to communicate by language brings men to agree on the signification of common words within some tolerable latitude, enough to serve for ordinary conversation. So a man cannot be supposed wholly ignorant of the ideas that common usage attaches to words in a language familiar to him. But common usage is a very uncertain rule. In the end it comes down to the ideas of particular men, and so it often proves a very variable standard.

A DICTIONARY OF PICTURES

Locke proposes small drawings to fix the names of things known by shape, and asks for constant usage.

A dictionary such as I mentioned above would take too much time, expense, and labor to be hoped for in this age. Even so, it seems to me not unreasonable to propose that words standing for things known and distinguished by their outward shapes should be expressed by little drawings and prints of them. A vocabulary made in this way might teach the true signification of many terms more easily and in less time, especially in the languages of remote countries or ages. It might also settle truer ideas in men's minds of various things whose names we read in ancient authors than all the large and laborious commentaries of learned critics can. Naturalists who write on plants and animals have found the benefit of this method. Anyone who has had occasion to consult them will have to admit that a little print of the herb apium or the beast ibex gives him a clearer idea of it than a long definition of either name could. No doubt the same

would hold for strigil and sistrum. The English names that dictionaries give for them are "currycomb" and "cymbal." He would understand them better if he could see small pictures of these instruments printed in the margin, showing them as the ancients used them.[47] "Toga, tunica, pallium" are words easily translated as gown, coat, and cloak. But those translations give us no more true idea of the fashion of those garments among the Romans than we have of the faces of the tailors who made them. Things like these, which the eye distinguishes by their shapes, are best brought into the mind by drawings of them. Drawings would fix the signification of such words better than any other words put in their place or used to define them. But this is only in passing.

3.11.26 5. *By constancy in their signification.*—Fifth: men may not take the trouble to declare the meaning of their words, and definitions of their terms may not be available. Even then, the least that can be expected is that in every discussion where one man claims to instruct or convince another, he should use the same word constantly in the same sense. If this were done (and nobody can refuse it without great dishonesty), many existing books could be spared, and many of the controversies now in dispute would be over. Several of those great volumes swollen with ambiguous words, used now in one sense and presently in another, would shrink to a very small compass. Many of the works of the philosophers (to mention no others), as well as of the poets, might be contained in a nutshell.

3.11.27 *When the variation is to be explained.*—But after all, the stock of words is very scanty compared with the infinite variety of thoughts. Men lack terms that fit their precise notions, and so, despite their utmost caution, they will often be forced to use the same word in somewhat different senses. In the course of a discussion or the pursuit of an argument, there is hardly room to stop for a particular definition every time a man varies the signification of a term. But if there is no deliberate fallacy, the drift

47 Apium is celery or parsley, and the ibex a wild mountain goat. The strigil was a curved scraper used by bathers, and the sistrum a rattle used in Egyptian rites.

of the discussion will usually be enough to lead fair-minded and intelligent readers to the true meaning. Where it is not enough to guide the reader, it is the writer's business to explain his meaning and show in what sense he is using the term in that place.

Book IV: Of Knowledge and Opinion (Chapters I–XIII)

Knowledge as the perception of agreement between ideas: its degrees and extent, its reality, truth, maxims, and our knowledge of ourselves, God and other things.

CHAPTER I. OF KNOWLEDGE IN GENERAL.

4.1.1 *Our knowledge is concerned with our ideas.*—In all its thoughts and reasonings, the mind has no other immediate object than its own ideas, which alone it does or can contemplate. It is evident, then, that our knowledge is concerned only with them.

4.1.2 *Knowledge is the perception of the agreement or disagreement of two ideas.*—Knowledge, then, seems to me to be nothing but the perception of the connection or agreement, or the disagreement and repugnance, of any of our ideas. It consists in this alone. Where this perception is, there is knowledge. Where it is not, we may fancy, guess, or believe, but we always fall short of knowledge. When we know that white is not black, what else do we do but perceive that these two ideas do not agree? When we possess the utmost security of the demonstration that the three angles of a triangle are equal to two right angles, what more do we do than perceive that equality to two right angles necessarily agrees with the three angles of a triangle and is inseparable from them?

4.1.3 *This agreement is of four kinds.*—To understand a little more distinctly what this agreement or disagreement consists in, I think we may reduce it all to these four sorts:

1. Identity, or diversity. 2. Relation. 3. Coexistence, or necessary connection. 4. Real existence.

4.1.4 1. *Of identity or diversity.*—First, as to the first sort of agreement or disagreement, namely identity or diversity. When the mind has any sentiments or ideas at all, its first act is to perceive them. So far as it perceives them, it knows what each one is, and thereby also perceives their difference, and that one is not another. This is so absolutely necessary that without it there could be no knowledge, no reasoning, no imagination, no distinct thoughts at all. By this the mind clearly and infallibly perceives that each idea agrees with itself and is what it is, and that all distinct ideas disagree—that is, that the one is not the other. The mind does this without pains, labor, or deduction, at first view, by its natural power of perception and distinction. Scholars have reduced this to the general rules "what is, is" and "it is impossible for the same thing to be and not to be," so that they can be applied readily wherever there is occasion to reflect on it. Yet it is certain that this faculty is first exercised on particular ideas. As soon as a man has the ideas he calls white and round in his mind, he infallibly knows that they are the very ideas they are, and not the other ideas he calls red or square. No maxim or proposition in the world can make him know it more clearly or surely than he knew it before, without any such general rule. This, then, is the first agreement or disagreement that the mind perceives in its ideas, and it always perceives it at first sight. If any doubt ever arises about it, the doubt will always be found to concern the names and not the ideas themselves. The identity and diversity of the ideas will always be perceived as soon and as clearly as the ideas themselves are, and it cannot possibly be otherwise.

4.1.5 2. *Relative.*—Second, the next sort of agreement or disagreement that the mind perceives in any of its ideas may, I think, be called relative. It is nothing but the perception of the relation between any two ideas of whatever kind, whether substances, modes, or any other. All distinct ideas must eternally be known not to be the same, and so must be universally and con-

stantly denied of one another. There could therefore be no room for any positive knowledge at all if we could not perceive some relation between our ideas, and find out the agreement or disagreement they have with one another in the various ways the mind uses to compare them.

4.1.6 3. *Of coexistence.*—Third, the third sort of agreement or disagreement found in our ideas, which the mind's perception deals with, is coexistence or non-coexistence in the same subject. This belongs particularly to substances. When we declare of gold that it is fixed, our knowledge of this truth amounts to no more than this. Fixedness, or a power to remain in the fire without being consumed, is an idea that always accompanies, and is joined with, that particular sort of yellowness, weight, fusibility, malleability, and solubility in aqua regia which make up our complex idea signified by the word gold.

4.1.7 4. *Of real existence.*—Fourth, the fourth and last sort is that of actual, real existence agreeing with any idea. All the knowledge we have or are capable of is contained, I suppose, within these four sorts of agreement or disagreement. All the inquiries we can make about any of our ideas, and all that we know or can affirm about them, come to this. An idea is or is not the same as some other. It does or does not always coexist with some other idea in the same subject. It has this or that relation to some other idea. Or it has a real existence outside the mind. Thus "blue is not yellow" is of identity; "two triangles on equal bases between two parallels are equal" is of relation; "iron is susceptible of magnetic impressions" is of coexistence; "God is" is of real existence. Identity and coexistence are really nothing but relations. Yet they are such distinctive ways in which our ideas agree or disagree that they well deserve to be treated as separate heads, and not under relation in general. They are very different grounds of affirmation and denial, as anyone will easily see who reflects on what is said in several places in this essay. I would now go on to examine the various degrees of our knowledge, but first I must consider the different senses of the word knowledge.

4.1.8 *Knowledge actual or habitual.*—There are several ways in which the mind possesses truth, and each of them is called knowledge.

1. There is actual knowledge, which is the present view the mind has of the agreement or disagreement of any of its ideas, or of the relation they have to one another.

2. A man is also said to know a proposition if, when it was once laid before his thoughts, he evidently perceived the agreement or disagreement of the ideas it consists of. He then stored it in his memory in such a way that whenever he reflects on that proposition again, he takes the right side without doubt or hesitation, assents to it, and is certain of its truth. This, I think, may be called habitual knowledge. In this way a man may be said to know all the truths stored in his memory by an earlier clear and full perception, and of these the mind is assured beyond doubt whenever it has occasion to reflect on them. Our finite understandings can think clearly and distinctly of only one thing at a time. If men had no knowledge of anything beyond what they were actually thinking of, they would all be very ignorant. The man who knew most would know only one truth, since that would be all he could think of at one time.

4.1.9 *Habitual knowledge is of two kinds.*—Habitual knowledge also comes, in common speech, in two degrees:

First, one is of truths stored in the memory in such a way that, whenever they occur to the mind, it actually perceives the relation between those ideas. This covers all the truths of which we have intuitive knowledge, where the ideas themselves, by an immediate view, reveal their agreement or disagreement with one another.

Second, the other is of truths of which the mind was once convinced, and of which it keeps the memory of the conviction without the proofs. Suppose a man remembers for certain that he once perceived the demonstration that the three angles of a triangle are equal to two right angles. He is certain that he knows it, because he cannot doubt its truth. When a man holds to a truth whose demonstration he has forgotten, though it was

by that demonstration that he first knew it, he may be thought to believe his memory rather than really to know. This way of holding a truth once seemed to me to be something between opinion and knowledge: a sort of assurance that exceeds mere belief, since belief relies on another's testimony. Yet on proper examination I find that it does not fall short of perfect certainty, and is in effect true knowledge. What tends to mislead our first thoughts on this point is that in this case the agreement or disagreement of the ideas is not perceived as it was at first. At first it was perceived by an actual view of all the intermediate ideas through which the agreement or disagreement of the ideas in the proposition was shown. Now it is perceived through other intermediate ideas, and these show the agreement or disagreement of the ideas contained in the proposition whose certainty we remember. Take the proposition that the three angles of a triangle are equal to two right angles. Someone who has seen and clearly perceived the demonstration of this truth still knows it to be true after the demonstration has gone out of his mind, so that it is not actually in view and perhaps cannot be recalled. But he knows it in a different way from before. The agreement of the two ideas joined in the proposition is perceived, but through other ideas than those that first produced that perception. He remembers, that is, he knows (for remembering is only the reviving of some past knowledge) that he was once certain of the truth of this proposition, that the three angles of a triangle are equal to two right angles. The unchangeableness of the same relations between the same unchangeable things is now the idea that shows him this: if the three angles of a triangle were once equal to two right angles, they will always be equal to two right angles. From this he comes to be certain that what was once true in the case is always true, and that ideas that once agreed will always agree. Consequently, what he once knew to be true he will always know to be true, as long as he can remember that he once knew it. It is on this ground that particular demonstrations in mathematics yield general knowledge. Suppose, then, that the perception that the same ideas will eternally have the

same connections and relations is not a sufficient ground of knowledge. In that case there could be no knowledge of general propositions in mathematics, for every mathematical demonstration would be merely particular. When a man had demonstrated a proposition about one triangle or circle, his knowledge would not reach beyond that particular diagram. If he wanted to extend it further, he would have to repeat his demonstration in another instance before he could know the proposition to be true of another similar triangle, and so on. In this way no one could ever arrive at knowledge of any general propositions. Nobody, I think, can deny that Mr. Newton certainly knows to be true any proposition that he reads at any time in his book, though he does not have in actual view the admirable chain of intermediate ideas by which he first discovered it to be true. A memory able to retain such a train of particulars may well be thought beyond the reach of human faculties, since the very discovery, perception, and putting together of that wonderful connection of ideas is found to surpass the comprehension of most readers. Yet it is evident that the author himself knows the proposition to be true, because he remembers that he once saw the connection of those ideas. He knows it as certainly as he knows that a certain man wounded another, when he remembers seeing him run the other through.[1] But memory is not always as clear as actual perception, and in all men it decays more or less over time. This is one of several differences showing that demonstrative knowledge is much more imperfect than intuitive knowledge, as we shall see in the following chapter.

DEGREES OF KNOWLEDGE

Knowledge is intuitive, demonstrative, or sensitive, and intuition supplies the certainty of every step of demonstration.

4.2.1 *Intuitive.*—All our knowledge consists, as I have said, in the view the mind has of its own ideas. This is the utmost light and

1 Isaac Newton (1643–1727); "his book" is the *Principia* (1687), which Locke greatly admired.

greatest certainty we are capable of with our faculties and in our way of knowing. So it may not be amiss to consider a little the degrees of its evidence. Our knowledge differs in clearness, it seems to me, because the mind perceives the agreement or disagreement of its ideas in different ways. If we reflect on our own ways of thinking, we shall find that sometimes the mind perceives the agreement or disagreement of two ideas immediately, by the ideas themselves, without the intervention of any other. This, I think, we may call intuitive knowledge. Here the mind is spared the trouble of proving or examining. It perceives the truth as the eye perceives light, simply by being turned toward it. In this way the mind perceives that white is not black, that a circle is not a triangle, and that three is more than two and equal to one and two. The mind perceives truths of this kind at first sight of the ideas together, by bare intuition, without the intervention of any other idea. This kind of knowledge is the clearest and most certain that human frailty is capable of. This part of knowledge is irresistible. Like bright sunshine, it forces itself to be perceived immediately, as soon as the mind turns its view that way. It leaves no room for hesitation, doubt, or examination, and the mind is at once filled with its clear light. All the certainty and evidence of all our knowledge depends on this intuition. Everyone finds this certainty so great that he cannot imagine a greater, and therefore cannot require one. A man cannot conceive himself capable of greater certainty than to know that an idea in his mind is such as he perceives it to be, and that two ideas in which he perceives a difference are different and not precisely the same. Whoever demands greater certainty than this demands he knows not what. He shows only that he would like to be a skeptic without being able to be one. Certainty depends so wholly on this intuition that it is necessary even in the next degree of knowledge, which I call demonstrative. There intuition is needed in every connection between the intermediate ideas, and without it we cannot attain knowledge and certainty.

4.2.2 *Demonstrative.*—The next degree of knowledge is where the mind perceives the agreement or disagreement of any ideas, but not immediately. Wherever the mind perceives the agreement or disagreement of any of its ideas, there is certain knowledge. Yet the mind does not always see the agreement or disagreement that exists between them, even where it could be discovered. In that case it remains ignorant, and at most gets no further than a probable conjecture. The mind cannot always perceive at once the agreement or disagreement of two ideas, because it cannot always put those ideas together in a way that shows it. Sometimes, then, the mind cannot bring its ideas together so as to perceive their agreement or disagreement by immediate comparison, placing them side by side, as it were, or laying one against another. In that case it is obliged to discover the agreement or disagreement it is looking for through the intervention of other ideas, one or more as it happens. This is what we call reasoning. Suppose the mind wants to know whether the three angles of a triangle agree or disagree in size with two right angles. It cannot find this out by an immediate view and comparison, because the three angles of a triangle cannot be brought together at once and compared with any one or two angles. So the mind has no immediate, intuitive knowledge of it. In this case the mind has to find some other angles to which the three angles of a triangle are equal. When it finds that those are equal to two right angles, it comes to know that the three angles of the triangle are equal to two right angles.

4.2.3 *Depends on proofs.*—The intervening ideas that serve to show the agreement of any two others are called proofs. Where the agreement or disagreement is plainly and clearly perceived by this means, it is called demonstration, since it is shown to the understanding and the mind is made to see that it is so. Quickness of mind in finding these intermediate ideas, which reveal the agreement or disagreement of other ideas, and in applying them rightly is, I suppose, what is called sagacity.

4.2.4 *But not so easy.*—This knowledge by intervening proofs is certain, but its evidence is not quite so clear and bright, nor the

assent so ready, as in intuitive knowledge. In demonstration the mind does at last perceive the agreement or disagreement of the ideas it is considering, but not without effort and attention. A single passing glance is not enough to find it. This discovery requires steady application and pursuit. The mind must advance by steps and degrees before it can arrive at certainty in this way. Only then does it come to perceive the agreement or repugnance between two ideas when showing it needs proofs and the use of reason.

4.2.5 *Not without prior doubt.*—Another difference between intuitive and demonstrative knowledge is this. In demonstrative knowledge all doubt is removed once the agreement or disagreement is perceived through the intermediate ideas, but before the demonstration there was a doubt. In intuitive knowledge that cannot happen to a mind whose faculty of perception remains capable of distinct ideas. It is no more possible there than it is for an eye that can see white and black distinctly to doubt whether this ink and this paper are the same color. If there is sight in the eyes, they will perceive at the first glance, without hesitation, that the words printed on this paper differ in color from the paper. In the same way, if the mind has the faculty of distinct perception, it will perceive the agreement or disagreement of the ideas that produce intuitive knowledge. If the eyes have lost the faculty of seeing, or the mind that of perceiving, it is useless to ask about quickness of sight in the one or clearness of perception in the other.

4.2.6 *Not so clear.*—It is true that the perception produced by demonstration is also very clear. Yet it often falls far short of the evident brilliance and full assurance that always accompany what I call intuitive knowledge. It is like a face reflected from one mirror to another through several mirrors. As long as the image keeps its likeness to the object, it produces knowledge. But with each successive reflection it loses some of the perfect clearness and distinctness of the first. At last, after many removes, it is much mixed with dimness and cannot be recog-

nized at first sight, especially by weak eyes. So it is with knowledge worked out by a long chain of proof.

4.2.7 *Each step must have intuitive evidence.*—In every step that reason takes in demonstrative knowledge, there is an intuitive knowledge of the agreement or disagreement it seeks with the next intermediate idea, which it uses as a proof. If this were not so, that step would itself need a proof, since without the perception of such agreement or disagreement no knowledge is produced. If the agreement is perceived by itself, it is intuitive knowledge. If it cannot be perceived by itself, some intervening idea is needed as a common measure to show the agreement or disagreement. From this it is plain that every step in reasoning that produces knowledge has intuitive certainty. Once the mind perceives it, nothing more is needed than to remember it in order to make visible and certain the agreement or disagreement of the ideas we are inquiring about. To make anything a demonstration, then, the mind must perceive the immediate agreement of the intervening ideas. Through these it finds the agreement or disagreement of the two ideas under examination, one of which always comes first in the reckoning and the other last. This intuitive perception of the agreement or disagreement of the intermediate ideas, at each step and advance of the demonstration, must also be carried accurately in the mind, and a man must be sure that no part has been left out. In long deductions that use many proofs, the memory does not always retain all this readily and accurately. So it happens that this knowledge is more imperfect than intuitive knowledge, and men often take falsehoods for demonstrations.

4.2.8 *Hence the mistake "ex praecognitis et praeconcessis."*—Each step of scientific or demonstrative reasoning needs this intuitive knowledge. That need gave rise, I imagine, to the mistaken axiom that all reasoning proceeds "ex praecognitis et praeconcessis." I shall show more fully how far this axiom is mistaken when I come to consider propositions, particularly the propositions called maxims. There I shall show that it is a mistake to

suppose that maxims are the foundations of all our knowledge and reasonings.[2]

4.2.9 *Demonstration not limited to quantity.*—It has generally been taken for granted that mathematics alone is capable of demonstrative certainty. But having an agreement or disagreement that can be perceived intuitively is not, I imagine, a privilege of the ideas of number, extension, and figure alone. So it may be our lack of proper method and application, and not any lack of sufficient evidence in things, that has made demonstration seem to have so little to do with other parts of knowledge, and made it scarcely attempted by anyone but mathematicians. Wherever we have ideas whose immediate agreement or disagreement the mind can perceive, the mind is capable of intuitive knowledge. And wherever it can perceive the agreement or disagreement of two ideas through an intuitive perception of the agreement or disagreement they have with some intermediate ideas, the mind is capable of demonstration. Demonstration is not limited to ideas of extension, figure, number, and their modes.

4.2.10 *Why it has been thought so.*—Demonstration has generally been sought, and supposed to exist, only in these ideas. The reason, I imagine, has been partly the general usefulness of those sciences. It has also been that when the modes of numbers are compared for equality or excess, even the smallest difference is very clear and perceptible. In extension not every smallest excess is so perceptible, but the mind has found ways to examine and discover by demonstration the exact equality of two angles, or extensions, or figures. And both of these—that is, numbers and figures—can be set down in visible and lasting marks, in which the ideas under consideration are perfectly determined. For the most part the ideas are not so determined when they are marked only by names and words.

4.2.11 But other simple ideas have modes and differences that are made and counted by degrees and not by quantity. We can-

2 Latin: "from things already known and already granted," a scholastic axiom derived from Aristotle's *Posterior Analytics*. Locke returns to maxims in 4.7.

not distinguish their differences finely and accurately enough to perceive them, or to find ways of measuring their exact equality or their smallest differences. Those other simple ideas are appearances or sensations produced in us by the size, figure, number, and motion of minute corpuscles, each of them imperceptible on its own. Their different degrees likewise depend on variation in some or all of those causes. We cannot observe that variation in particles of matter, since each particle is too fine to be perceived. It is therefore impossible for us to have any exact measures of the different degrees of these simple ideas. Suppose that the sensation or idea we call whiteness is produced in us by a certain number of globules, spinning about their own centers, which strike the retina of the eye with a certain degree of rotation as well as forward speed. It will easily follow that the more the surface parts of a body are arranged so as to reflect a greater number of globules of light, and to give them the proper rotation for producing this sensation of white in us, the whiter that body will appear. The body that sends to the retina the greater number of such corpuscles, with that particular sort of motion, from an equal area will appear whiter.[3] I do not say that the nature of light consists in very small round globules. Nor do I say that whiteness consists in a texture of parts that gives these globules a certain rotation when it reflects them, for I am not now treating light or colors as a natural philosopher. But this much, I think, I may say. I cannot conceive how bodies outside us can in any way affect our senses except in two ways, and I would be glad if anyone would make intelligible that he could. One is the immediate contact of the sensible bodies themselves, as in tasting and feeling. The other is the impulse of some imperceptible particles coming from them, as in seeing, hearing, and smelling. The variety of sensations is produced in us by the different impulses of these particles, which are caused by their different size, figure, and motion.

4.2.12 Whether, then, they are globules or not, and whether or not they spin about their own centers in a way that produces the

3 The theory of spinning globules of light comes from Descartes's optics.

idea of whiteness in us, this much is certain. The more particles of light a body reflects that are fitted to give them the peculiar motion that produces the sensation of whiteness in us (and possibly, too, the quicker that peculiar motion is), the whiter that body appears. This is evident with the same piece of paper placed in the sunbeams, in the shade, and in a dark hole. In each of these places it will produce in us the idea of whiteness in very different degrees.

4.2.13 Since we do not know what number of particles, or what motion of them, is fit to produce any precise degree of whiteness, we cannot demonstrate the exact equality of any two degrees of whiteness. We have no certain standard to measure them by, and no means of distinguishing even the smallest real difference. The only help we have comes from our senses, and on this point they fail us. But where the difference is great enough to produce clearly distinct ideas in the mind, whose differences can be perfectly retained, these ideas or colors are as capable of demonstration as ideas of number and extension. We see this in different kinds of color, such as blue and red. What I have said here about whiteness and colors holds true, I think, of all secondary qualities and their modes.

SENSITIVE KNOWLEDGE

Our perception of things actually present to the senses goes beyond probability, and dreams do not undermine it.

4.2.14 *Sensitive knowledge of particular existence.*—These two, namely intuition and demonstration, are the degrees of our knowledge. Whatever falls short of one of these, however confidently it is embraced, is only faith or opinion and not knowledge, at least in all general truths. There is, indeed, another perception of the mind, concerned with the particular existence of finite beings outside us. It goes beyond mere probability, and yet it does not fully reach either of the foregoing degrees of certainty. It passes under the name of knowledge. Nothing can be more certain than that the idea we receive from an external object is in our

minds. This is intuitive knowledge. But is there anything more than just that idea in our minds? Can we infer from it with certainty the existence of anything outside us that corresponds to that idea? Some people think this can be questioned, because people may have such ideas in their minds when no such thing exists and no such object affects their senses. Yet here, I think, we are provided with evidence that puts us beyond doubt. I ask anyone whether he is not irresistibly aware of a different perception when he looks at the sun by day and when he thinks of it by night. Is it not different when he actually tastes wormwood or smells a rose, and when he only thinks of that taste or smell? We find the difference between an idea revived in our minds by our own memory and an idea actually coming into our minds through our senses as plainly as we find the difference between any two distinct ideas. Someone may say that a dream may do the same thing, and that all these ideas may be produced in us without any external objects. If so, he may please to dream that I give him this answer. 1. It does not much matter whether I remove this doubt or not. Where everything is only a dream, reasoning and arguments are useless, and truth and knowledge are nothing. 2. I believe he will grant that there is a very obvious difference between dreaming of being in the fire and actually being in it. But suppose he is determined to appear so skeptical as to maintain that what I call actually being in the fire is nothing but a dream, and that we therefore cannot know for certain that any such thing as fire actually exists outside us. I answer that we find for certain that pleasure or pain follows when certain objects are applied to us, objects whose existence we perceive, or dream that we perceive, by our senses. This certainty is as great as our happiness or misery, and beyond that we have no concern either to know or to be. So I think we may add this to the two former sorts of knowledge: knowledge of the existence of particular external objects, by the perception and consciousness we have of the actual entrance of ideas from them. We may then allow these three degrees of knowledge, namely intuitive,

demonstrative, and sensitive. In each of them there are different degrees and kinds of evidence and certainty.

4.2.15 *Knowledge not always clear where the ideas are.*—Our knowledge is founded on our ideas and concerned with them only. Won't it follow, then, that our knowledge matches our ideas, so that where our ideas are clear and distinct, or obscure and confused, our knowledge will be so too? I answer: no. Our knowledge consists in the perception of the agreement or disagreement of any two ideas. So its clearness or obscurity consists in the clearness or obscurity of that perception, and not in the clearness or obscurity of the ideas themselves. For example, a man may have ideas of the angles of a triangle, and of equality to two right angles, as clear as any mathematician in the world, and still have only a very obscure perception of their agreement, and so only a very obscure knowledge of it. But ideas that are confused, whether through obscurity or for some other reason, cannot produce any clear or distinct knowledge. To the extent that any ideas are confused, the mind cannot perceive clearly whether they agree or disagree. Or, to put the same thing in a way less likely to be misunderstood: someone who has not attached determinate ideas to the words he uses cannot make propositions out of them whose truth he can be certain of.

THE EXTENT OF HUMAN KNOWLEDGE

Knowledge reaches no farther than our ideas, and falls short even of them.

4.3.1 Knowledge, as has been said, lies in the perception of the agreement or disagreement of any of our ideas. From this it follows that:

1. *No farther than we have ideas.*—First, we can have knowledge no farther than we have ideas.

4.3.2 2. *No farther than we can perceive their agreement or disagreement.*—Second, we can have no knowledge farther than we can perceive their agreement or disagreement. This perception comes in one of three ways. 1. By intuition, the immediate com-

parison of any two ideas. 2. By reason, examining the agreement or disagreement of two ideas through the intervention of some others. 3. By sensation, perceiving the existence of particular things. Hence it also follows:

4.3.3 3. *Intuitive knowledge does not extend to all the relations of all our ideas.*—Third, we cannot have an intuitive knowledge that extends to all our ideas and to everything we would like to know about them. We cannot examine and perceive all the relations they have to one another by juxtaposition, that is, by comparing them immediately with one another. Take, for instance, the ideas of an obtuse-angled triangle and an acute-angled triangle, both drawn on equal bases and between parallels. I can perceive by intuitive knowledge that the one is not the other. But I cannot know in that way whether they are equal or not, because their agreement or disagreement in equality can never be perceived by comparing them immediately. The difference in shape means their parts cannot be laid exactly and immediately against each other. So we need some intervening qualities to measure them by, and that is demonstration, or rational knowledge.

4.3.4 4. *Nor demonstrative knowledge.*—Fourth, it also follows from what was observed above that our rational knowledge cannot reach the whole extent of our ideas. Between two different ideas that we would like to examine, we cannot always find intermediate ideas that we can connect to one another with intuitive knowledge at every step of the deduction. Wherever that fails, we fall short of knowledge and demonstration.

4.3.5 5. *Sensitive knowledge narrower than either.*—Fifth, sensitive knowledge reaches no farther than the existence of things actually present to our senses, and so it is much narrower still than either of the former.

4.3.6 6. *Our knowledge therefore narrower than our ideas.*—From all this it is evident that the extent of our knowledge falls short not only of the reality of things but even of the extent of our own ideas. Our knowledge is limited to our ideas and cannot exceed them in either extent or perfection. These are very narrow bounds compared with the extent of all being. They fall far short

of what we may reasonably imagine in some understandings, even created ones, that are not tied down to the dull and narrow information we receive through a few not very sharp ways of perception, such as our senses. Yet it would be well with us if our knowledge were only as large as our ideas. As it is, there are many doubts and questions about the ideas we do have that we have not resolved, and that I believe we never shall resolve in this world. Nevertheless, I do not doubt that human knowledge, under the present circumstances of our being and constitution, might be carried much farther than it has been so far. That would happen if people would sincerely and with a free mind devote to improving the means of discovering truth all the industry and labor of thought that they now spend on dressing up or propping up falsehood, in order to maintain some system, interest, or party they have once committed themselves to. But after all, I think I may be confident, without any slight to human perfection, that our knowledge would never reach everything we might wish to know about the ideas we have. Nor would it be able to overcome all the difficulties and resolve all the questions that might arise about any of them. We have the ideas of a square, a circle, and equality. And yet perhaps we shall never be able to find a circle equal to a square and know for certain that it is so.

COULD MATTER THINK?

Without revelation we cannot know whether God has given some systems of matter a power to think.

We have the ideas of matter and of thinking, but possibly we shall never be able to know whether any merely material being thinks or not. By contemplating our own ideas without revelation, we cannot discover whether omnipotence has given to some systems of matter, suitably arranged, a power to perceive and think, or has instead joined and fixed a thinking immaterial substance to matter so arranged. As far as our notions go, it is not much harder for us to conceive that God can, if he pleases,

superadd to matter a faculty of thinking than that he should superadd to it another substance with a faculty of thinking. We do not know what thinking consists in. Nor do we know to what sort of substances the Almighty has been pleased to give that power, which cannot be in any created being except purely by the good pleasure and bounty of the Creator.[4] For I see no contradiction in the first eternal thinking being giving some degrees of sense, perception, and thought, if he pleased, to certain systems of created, senseless matter, put together as he sees fit. Yet, as I think I have proved in Book IV, Chapter 10, Section 14, it is nothing less than a contradiction to suppose that matter should be that eternal first thinking being, since matter is evidently void of sense and thought by its own nature. Take some perceptions, for example pleasure and pain. What certainty of knowledge can anyone have that they could not be in some bodies themselves, modified and moved in a certain way, just as well as in an immaterial substance, following the motions of the parts of the body? As far as we can conceive, body can only strike and affect body. And motion, to the utmost reach of our ideas, can produce nothing but motion. So when we allow that it produces pleasure or pain, or the idea of a color or sound, we are obliged to leave our reason behind, go beyond our ideas, and attribute it entirely to the good pleasure of our Maker. We must allow that he has attached to motion effects that we can in no way conceive motion able to produce. What reason, then, do we have to conclude that he could not arrange for them to be produced in a subject we cannot conceive to be capable of them? He could do that just as well as have them produced in a subject on which we cannot conceive the motion of matter operating in any way. I do not say this in order to weaken in any way the belief in the soul's immateriality. I am not speaking here of probability, but of knowledge. And I think it suits the modesty of philosophy not to pronounce authoritatively where we lack the evidence that can produce knowledge. I also think it is useful for us to see

4 This "thinking matter" passage drew a sharp attack from Bishop Edward Stillingfleet and set off a long public controversy; Voltaire later made it famous.

how far our knowledge does reach. The state we are in at present is not that of vision, and so in many things we must content ourselves with faith and probability. In the present question, about the immateriality of the soul, we need not think it strange if our faculties cannot arrive at demonstrative certainty. All the great ends of morality and religion are secure enough without philosophical proofs of the soul's immateriality. He made us at the beginning to exist here as sensible, intelligent beings, and kept us in that state for a number of years. It is evident that he can and will restore us to a similar state of sensibility in another world, and make us capable there of receiving the reward or punishment he has designed for people according to their deeds in this life. So it is not as tremendously necessary to settle the question one way or the other as some people, overzealous for or against the immateriality of the soul, have been eager to make the world believe. On the one side are those who indulge too far their thoughts, which are sunk entirely in matter, and so can allow no existence to anything that is not material. On the other side are those who have examined the natural powers of matter over and over with the utmost effort of mind, and, not finding thought among them, are confident enough to conclude that omnipotence itself cannot give perception and thought to a substance that has the modification of solidity. Anyone who considers how hard it is, in our thoughts, to reconcile sensation with extended matter, or existence with anything that has no extension at all, will admit that he is very far from knowing for certain what his soul is. It is a point that seems to me to be placed out of the reach of our knowledge. Suppose someone allows himself to consider it freely, and looks into the dark and intricate part of each hypothesis. He will hardly find his reason able to settle him firmly for or against the soul's materiality. He may view the soul either as an unextended substance or as thinking extended matter. Whichever side he views it from, the difficulty of conceiving that one, as long as it alone is in his thoughts, will keep driving him to the opposite side. Some people deal with themselves in this unfair way. Because

something in one hypothesis is inconceivable to them, they throw themselves violently into the opposite hypothesis, though it is altogether as unintelligible to an unbiased understanding. This shows the weakness and scantiness of our knowledge. It also shows the hollow triumph of arguments of this kind. Drawn from our own views, they may satisfy us that we can find no certainty on one side of the question. But they do nothing to bring us to the truth when we run into the opposite opinion, which on examination will be found burdened with equal difficulties. A man may meet with apparent absurdities in one opinion, and with obstacles he cannot get past. What safety, what advantage is it to him to escape them by taking refuge in the opposite opinion, which is built on something just as inexplicable and just as far beyond his comprehension? It is beyond dispute that we have in us something that thinks. Our very doubts about what it is confirm the certainty of its existence, though we must content ourselves with not knowing what kind of being it is. It is pointless to try to be skeptical about this. It is just as unreasonable, in most other cases, to be positive against the existence of anything because we cannot comprehend its nature. For I would very much like to know what substance exists that does not have something in it that plainly baffles our understanding. Other spirits, who see and know the nature and inner constitution of things: how much must they exceed us in knowledge? Suppose we add a larger comprehension to this. It lets them see at one glance the connection and agreement of a great many ideas. It readily supplies them with the intermediate proofs that we barely find out at last, by single, slow steps and long groping in the dark, often ready to forget one before we have hunted out another. Then we may guess at some part of the happiness of higher ranks of spirits, who have a quicker and more penetrating sight as well as a larger field of knowledge. But to return to the argument at hand. Our knowledge, I say, is not only limited to the scantiness and imperfection of the ideas we have and employ it on, but even falls short of that. How far it does reach, let us now inquire.

COEXISTENCE AND ITS LIMITS

We know very little about which qualities necessarily go together in substances, since their connections are hidden.

4.3.7 *How far our knowledge reaches.*—The affirmations or denials we make concerning the ideas we have can be reduced to four sorts, as I indicated in general before, namely identity, coexistence, relation, and real existence. I shall examine how far our knowledge extends in each of these.

4.3.8 1. *Our knowledge of identity and diversity, as far as our ideas.*—First, as to identity and diversity, as one way in which our ideas agree or disagree. Here our intuitive knowledge extends as far as our ideas themselves. There can be no idea in the mind that the mind does not immediately perceive, by intuitive knowledge, to be what it is and to be different from any other.

4.3.9 2. *Of coexistence, a very little way.*—Second, as to the second sort, which is the agreement or disagreement of our ideas in coexistence. Here our knowledge is very limited, even though the greatest and most important part of our knowledge concerning substances consists in this. For our ideas of the species of substances are, as I have shown, nothing but certain collections of simple ideas united in one subject, and so coexisting together. For example, our idea of flame is a body that is hot, luminous, and moving upward. Our idea of gold is a body that is heavy to a certain degree, yellow, malleable, and fusible. The two names of these different substances, flame and gold, stand for these complex ideas in people's minds, or for some like them. When we want to know anything further about these or any other sort of substances, what do we inquire into but what other qualities or powers these substances have or do not have? And that is nothing else but to know what other simple ideas do or do not coexist with those that make up that complex idea.

4.3.10 *Because the connection between most simple ideas is unknown.*—This part of human science is weighty and considerable, but it is still very narrow, hardly any at all. The reason is this. The

simple ideas that make up our complex ideas of substances are, for the most part, ideas whose own nature shows no visible necessary connection with, or inconsistency with, any other simple ideas. And it is their coexistence with those other ideas that we want to find out about.

4.3.11 *Especially of secondary qualities.*—The ideas that make up our complex ideas of substances, and that our knowledge of substances is mostly concerned with, are those of their secondary qualities. These all depend, as has been shown, on the primary qualities of the substances' minute and insensible parts, or, if not on them, on something even further beyond our comprehension. So it is impossible for us to know which of these qualities are necessarily united with one another and which are inconsistent with one another. We do not know the root they spring from. We do not know what size, shape, and texture of parts produce the qualities that make up our complex idea of gold. So it is impossible for us to know what other qualities result from the same constitution of the insensible parts of gold, or are incompatible with it. Consequently, we cannot know which qualities must always coexist with our complex idea of gold, or else are inconsistent with it.

4.3.12 *Because all connection between any secondary and primary qualities is undiscoverable.*—Besides this ignorance of the primary qualities of the insensible parts of bodies, on which all their secondary qualities depend, there is another and more incurable part of our ignorance. It puts us even further from certain knowledge of the coexistence or incoexistence (if I may put it that way) of different ideas in the same subject. It is this: there is no discoverable connection between any secondary quality and the primary qualities it depends on.

4.3.13 It is not beyond our conception that the size, shape, and motion of one body should cause a change in the size, shape, and motion of another body. Consider the separation of the parts of one body when another pushes into it, and the change from rest to motion upon impact. These and the like seem to us to have some connection with one another. And if we knew

these primary qualities of bodies, we might have reason to hope we could know a great deal more about how they act on one another. But our minds cannot discover any connection between those primary qualities of bodies and the sensations they produce in us. So we can never establish certain and undoubted rules about the consequences or coexistence of any secondary qualities, even if we could discover the size, shape, or motion of the invisible parts that immediately produce them. We are far from knowing what shape, size, or motion of parts produces a yellow color, a sweet taste, or a sharp sound. In fact, we cannot in any way conceive how any size, shape, or motion of any particles could possibly produce in us the idea of any color, taste, or sound whatever. There is no conceivable connection between the one and the other.

4.3.14 It is therefore in vain for us to try to discover by our ideas (the only true way to certain and universal knowledge) what other ideas are always joined with our complex idea of any substance. We do not know the real constitution of the minute parts on which their qualities depend. And even if we did know it, we could not discover any necessary connection between it and any of the secondary qualities. Yet this must be done before we can know their necessary coexistence for certain. So whatever our complex idea of any species of substances may be, we can hardly determine with certainty, from the simple ideas contained in it, the necessary coexistence of any other quality whatever. Our knowledge in all these inquiries reaches very little farther than our experience. Admittedly, a few of the primary qualities have a necessary dependence on, and visible connection with, one another. Shape necessarily presupposes extension, and receiving or communicating motion by impact presupposes solidity. But though these ideas, and perhaps some others, have such a connection, very few have a visible connection with one another. So we can discover by intuition or demonstration the coexistence of very few of the qualities found united in substances. We are left with only the help of our senses to tell us what qualities they contain. Many qualities coexist in a

subject without this dependence and evident connection of their ideas with one another. Of all such qualities, we cannot know for certain that any two coexist any further than experience, through our senses, informs us. Take a piece of gold. We see its yellow color, and on trial we find the weight, malleability, fusibility, and fixedness that are united in it. Yet none of these ideas has any evident dependence on, or necessary connection with, the others. So we cannot know for certain that where any four of them are, the fifth will be there too, however highly probable that may be. The highest probability does not amount to certainty, and without certainty there can be no true knowledge. For this coexistence can be known no further than it is perceived. And it can be perceived in only two ways: in particular subjects, by the observation of our senses, or in general, by the necessary connection of the ideas themselves.

4.3.15 *Of incompatibility in coexisting, larger.*—As to incompatibility, or repugnancy to coexistence: we can know that any subject can have only one particular of each sort of primary quality at a time. For example, each particular extension, shape, number of parts, or motion excludes all others of its kind. The same is also certain of all the sensible ideas peculiar to each sense. Whatever of each kind is present in any subject excludes all others of that sort. For example, no one subject can have two smells or two colors at the same time. Someone may perhaps reply: does not an opal, or the infusion of *lignum nephriticum,* have two colors at the same time? I answer that these bodies may show different colors at the same time to eyes placed in different positions. But I also take the liberty of saying that, to eyes in different positions, it is different parts of the object that reflect the particles of light. So it is not the same part of the object, and therefore not the very same subject, that appears both yellow and azure at the same time. It is as impossible for the very same particle of any body to modify or reflect the rays of light differently at the same time as it is for it to have two different shapes and textures at the same time.

4.3.16 *Of the coexistence of powers, a very little way.*—Then there are the powers of substances to change the sensible qualities of other bodies. These make up a great part of our inquiries about substances, and are no small branch of our knowledge. As to these, I doubt whether our knowledge reaches much further than our experience. I also doubt whether we can discover most of these powers, and be certain they are in any subject, by the connection of any of the ideas that for us make up its essence. For the active and passive powers of bodies, and their ways of operating, consist in a texture and motion of parts that we cannot by any means discover. So it is only in very few cases that we can perceive their dependence on, or repugnance to, any of the ideas that make up our complex idea of that sort of thing. I have used the corpuscular hypothesis as my example here, since it is thought to go furthest in giving an intelligible explanation of those qualities of bodies. And I fear the weakness of human understanding is hardly able to put another in its place. Several sorts of bodies are observed to have powers united in them. I doubt that any other hypothesis would give us a fuller and clearer discovery of the necessary connection and coexistence of those powers. This at least is certain, whichever hypothesis is clearest and truest (it is not my business to decide that). Our knowledge concerning bodily substances will be very little advanced by any of them until we are made to see which qualities and powers of bodies have a necessary connection with one another and which are repugnant to one another. In the present state of philosophy, I think, we know this only to a very small degree. And I doubt whether, with the faculties we have, we shall ever be able to carry our general knowledge in this area much further (I do not say particular experience). Experience is what we must depend on here. And it is to be wished that experience were further developed. We see the advantages that some people's generous efforts in this direction have brought to the stock of natural knowledge. Others, especially the philosophers by fire who lay claim to it, have not been as careful in their observations or as honest in their reports as those who call

themselves philosophers ought to be. If they had been, our acquaintance with the bodies around us, and our insight into their powers and operations, would have been much greater still.[5]

4.3.17 *Of spirits, yet narrower.*—If we are at a loss about the powers and operations of bodies, I think it is easy to conclude that we are much more in the dark about spirits. Naturally, we have no ideas of spirits except what we draw from the idea of our own spirit, by reflecting on the operations of our own souls within us, as far as those operations can come within our observation. There are various and possibly countless kinds of nobler beings, and the spirits that inhabit our bodies hold an insignificant rank among them. They fall far short of the endowments and perfections of cherubim and seraphim and infinite sorts of spirits above us. I have put this to my reader's consideration by a passing hint in another place.

MORALITY CAPABLE OF DEMONSTRATION

Moral ideas could be demonstrated like mathematics, if their complexity and lack of sensible marks were overcome.

4.3.18 3. *Of other relations, it is not easy to say how far.*—As to the third sort of our knowledge, namely the agreement or disagreement of any of our ideas in any other relation. This is the largest field of our knowledge, and for that reason it is hard to determine how far it may extend. The advances made in this part of knowledge depend on our sagacity in finding intermediate ideas that can show the relations and bearings of ideas, where coexistence is not in question. So it is hard to tell when we have come to the end of such discoveries. It is equally hard to tell when reason has all the aids it is capable of for finding proofs or for examining the agreement or disagreement of remote ideas. Those who are ignorant of algebra cannot imagine the wonders

5 Locke probably has in mind the experimental work of Robert Boyle and the Royal Society; the "philosophers by fire" are the chemists and alchemists who worked at the furnace.

of this kind that it can do. And it is not easy to determine what further improvements and aids, useful to other parts of knowledge, the sagacious mind of man may yet discover. This at least I believe: the ideas of quantity are not the only ones capable of demonstration and knowledge. Other fields of contemplation, perhaps more useful ones, would give us certainty, if vices, passions, and domineering interest did not oppose or threaten such efforts.

Morality capable of demonstration.—We have a clear idea of a Supreme Being, infinite in power, goodness, and wisdom, whose workmanship we are and on whom we depend. We also have a clear idea of ourselves as understanding, rational beings. If these ideas were duly considered and pursued, they would, I suppose, provide foundations for our duty and rules of action that might place morality among the sciences capable of demonstration. In such a science, I have no doubt, the measures of right and wrong could be worked out from self-evident propositions, by necessary consequences as incontestable as those in mathematics. They could be worked out by anyone who applies himself to the one science with the same impartiality and attention as he does to the other. The relations of other modes can certainly be perceived, just as the relations of number and extension can. I cannot see why they should not also be capable of demonstration, if proper methods were devised for examining or pursuing their agreement or disagreement. "Where there is no property, there is no injustice" is a proposition as certain as any demonstration in Euclid. The idea of property is a right to anything. The idea to which the name "injustice" is given is the invasion or violation of that right. Once these ideas are established and these names attached to them, it is evident that I can know this proposition to be true as certainly as I know that a triangle has three angles equal to two right angles. Again, take the proposition "No government allows absolute liberty." The idea of government is the establishment of society on certain rules or laws that require conformity to them. The idea of absolute liberty is that anyone may do whatever he

pleases. So I am as capable of being certain of the truth of this proposition as of any in mathematics.

4.3.19 *Two things have made moral ideas thought incapable of demonstration: their complexity, and the lack of sensible representations.*—In this respect, ideas of quantity have had an advantage that made them seem more capable of certainty and demonstration. That advantage is,

First, that they can be set down and represented by sensible marks, which correspond to them more fully and closely than any words or sounds whatever. Diagrams drawn on paper are copies of the ideas in the mind, and are not subject to the uncertainty that words carry in their meaning. An angle, circle, or square drawn in lines lies open to view and cannot be mistaken. It stays unchanged, and can be considered and examined at leisure. The demonstration can be reviewed, and all its parts gone over more than once, without any danger of the least change in the ideas. This cannot be done in the same way with moral ideas. We have no sensible marks that resemble them by which we can set them down. We have nothing but words to express them. When words are written, they stay the same, but the ideas they stand for may change in the same man. And they are very seldom the same in different people.

Second, another thing that makes ethics more difficult is that moral ideas are commonly more complex than the ideas of the figures ordinarily considered in mathematics. Two drawbacks follow from this. First, their names have a more uncertain meaning, since people do not so easily agree on the precise collection of simple ideas they stand for. So the sign used for them does not steadily carry the same idea with it, always in communication and often in thinking. The result is the same disorder, confusion, and error that would follow if a man set out to demonstrate something about a heptagon and, in the diagram he used for it, left out one of the angles. Or it would be as if he drew the figure by oversight with one angle more than the name ordinarily meant, or than he intended when he first thought of his demonstration. This often happens, and is hardly avoidable,

in very complex moral ideas. The same name is kept, but one angle, that is, one simple idea, is left out of the complex idea or put into it at one time more than at another, while it is still called by the same name. Second, the complexity of moral ideas brings another drawback, namely that the mind cannot easily retain those precise combinations as exactly and perfectly as is needed. That exactness is necessary for examining the relations and correspondences, the agreements or disagreements, of several of them with one another. It is especially necessary where the question has to be judged by long chains of reasoning, with several other complex ideas coming in between to show the agreement or disagreement of two remote ones.

Mathematicians find a great help against this in diagrams and figures, which stay unaltered once drawn. That help is very evident: without it, the memory would often have great difficulty retaining them so exactly while the mind went over their parts step by step to examine their various correspondences. Consider casting up a long sum, whether in addition, multiplication, or division. Every part is only a progression of the mind, taking a view of its own ideas and considering their agreement or disagreement. The answer to the question is nothing but the result of the whole, made up of such particulars, each of which the mind clearly perceives. Yet suppose we did not set down the various parts in marks whose precise meanings are known, marks that last and remain in view after the memory has let them go. Then it would be almost impossible to carry so many different ideas in the mind without confusing or letting slip some parts of the reckoning, and so making all our reasoning about it useless. In this case the numerals or marks do not help the mind at all to perceive the agreement of any two or more numbers, or their equalities or proportions. The mind has that only by intuition of its own ideas of the numbers themselves. But the numerical characters are helps to the memory, to record and retain the various ideas about which the demonstration is made. By them a man may know how far his intuitive knowledge has proceeded in surveying the several particulars. He can

then go on without confusion to what is still unknown, and at last have before him in one view the result of all his perceptions and reasonings.

4.3.20 *Remedies of those difficulties.*—Some of these disadvantages in moral ideas have made people think them incapable of demonstration. One part of them may be remedied to a large degree by definitions: we set down the collection of simple ideas that each term is to stand for, and then use the terms steadily and consistently for that precise collection. It is not easy to foretell what methods algebra, or something of that kind, may suggest in the future for removing the other difficulties. I am confident that if men searched for moral truths by the same method, and with the same impartiality, as they search for mathematical ones, they would find that moral truths have a stronger connection with one another than is commonly imagined. They would also find that these truths follow more necessarily from our clear and distinct ideas, and come nearer to perfect demonstration. But not much of this is to be expected so long as the desire of esteem, riches, or power makes men embrace the well-endowed opinions in fashion. They then look for arguments either to show off the beauty of those opinions or to varnish over and cover their ugliness. For nothing is so beautiful to the eye as truth is to the mind, and nothing so ugly and irreconcilable to the understanding as a lie. Many a man can, with satisfaction enough, embrace a wife who is none too handsome. But who is bold enough to admit openly that he has married a falsehood and taken into his heart so ugly a thing as a lie? The parties of men cram their tenets down the throats of everyone they can get into their power, without letting them examine whether those tenets are true or false. They will not let truth have fair play in the world, nor let men have the liberty to search for it. While this goes on, what improvements of this kind can be expected? What greater light can be hoped for in the moral sciences? Instead, in most places the subject part of mankind might expect Egyptian darkness along with Egyptian bondage. They would, were it not for the candle of the Lord, set up by

himself in men's minds, which the breath or power of man can never wholly put out.[6]

4.3.21 4. *Of real existence: we have an intuitive knowledge of our own; demonstrative, of God's; sensitive, of some few other things.*—As for the fourth sort of our knowledge, namely of the real, actual existence of things: we have an intuitive knowledge of our own existence and a demonstrative knowledge of the existence of a God. Of the existence of anything else we have only sensitive knowledge, which does not extend beyond the objects present to our senses.

THE EXTENT OF OUR IGNORANCE

Our ignorance comes from lacking ideas, lacking discoverable connections, and failing to trace the ideas we have.

4.3.22 *Our ignorance great.*—Our knowledge is as narrow as I have shown. So it may perhaps shed some light on the present state of our minds if we look a little into the dark side and take a view of our ignorance. Our ignorance is infinitely larger than our knowledge, and seeing it may do much to quiet disputes and improve useful knowledge. That will happen if we discover how far we have clear and distinct ideas and confine our thoughts to things within the reach of our understandings. We should not launch out into that abyss of darkness (where we have no eyes to see, nor faculties to perceive anything) out of a presumption that nothing is beyond our comprehension. But we need not go far to be convinced of the folly of such a notion. Anyone who knows anything knows this first of all: he need not look long for instances of his own ignorance. The humblest and most obvious things that come in our way have dark sides that the sharpest sight cannot penetrate. The clearest and broadest understandings among thinking men find themselves puzzled and at a loss in every particle of matter. We shall be less surprised to find it so when we consider the causes of our ignorance. From what

6 Egyptian darkness: the plague of darkness in Exodus 10:21–23. "The spirit of man is the candle of the Lord": Proverbs 20:27.

has been said, I suppose these will be found to be the following three:

First, lack of ideas.

Second, lack of a discoverable connection between the ideas we have.

Third, failure to trace and examine our ideas.

4.3.23 *First, one cause of it, lack of ideas: either such as we have no conception of, or such as we in particular do not have.*—First, there are some things, and not a few of them, that we are ignorant of for lack of ideas.

First, all the simple ideas we have are confined (as I have shown) to two sources. We receive some from bodily objects by sensation, and others from the operations of our own minds as the objects of reflection. These few and narrow inlets are out of all proportion to the vast whole extent of all beings. That will not be hard to persuade anyone who is not so foolish as to think his own span the measure of all things. The creatures in other parts of the universe may have other simple ideas, with the help of senses and faculties more numerous or more perfect than ours, or different from them. What those ideas might be is not for us to determine. But to say or think there are no such ideas, because we conceive nothing of them, is no better an argument than a blind man's insisting that there is no such thing as sight and colors. He would argue so because he had no idea of any such thing and could not by any means form any notion of seeing. The ignorance and darkness in us no more hinder or limit the knowledge in others than the blindness of a mole is an argument against the keen sight of an eagle. Whoever considers the infinite power, wisdom, and goodness of the Creator of all things will find reason to think that it was not all spent on so inconsiderable, lowly, and impotent a creature as man. For he will find that man is, in all probability, one of the lowest of all intellectual beings. So we do not know what faculties other species of creatures have for penetrating into the nature and inmost constitution of things. Nor do we know what ideas they may receive from them, far different from ours. This we do know and cer-

tainly find: to make our discoveries about things more perfect, we lack several other views of them besides those we have. A positive, clear, and distinct idea of substance itself, which is the foundation of all the rest, is hidden from us. That may convince us that the ideas we can attain by our faculties are greatly out of proportion to things themselves. But lack of ideas of this kind is part as well as cause of our ignorance, and so it cannot be described. Only this, I think, I may say of it with confidence: the intellectual world and the sensible world are perfectly alike in this respect. The part of either that we see bears no proportion to what we do not see. Whatever we can reach of either with our eyes or our thoughts is only a point, almost nothing in comparison with the rest.

4.3.24 *Because of their remoteness; or*—Second, another great cause of ignorance is the lack of ideas that we are capable of having. There is a lack of ideas that our faculties cannot give us. It is reasonable to think that other beings, more perfect than we are, have views of things of which we know nothing, and that lack shuts us out from them entirely. In the same way, the lack of ideas I am now speaking of keeps us ignorant of things we conceive to be capable of being known to us. We have ideas of bulk, figure, and motion. We are not without ideas of these primary qualities of bodies in general. But we do not know the particular bulk, figure, and motion of most of the bodies in the universe. So we are ignorant of the various powers, efficacies, and ways of operating by which the effects we see every day are produced. In some things these are hidden from us by being too remote, and in others by being too minute. Consider the vast distance of the known and visible parts of the world, and the reasons we have to think that what lies within our view is only a small part of the universe. We shall then discover a huge abyss of ignorance. Great masses of matter make up the whole stupendous frame of bodily beings. What their particular structures are, how far they extend, what their motion is, how it is continued or communicated, and what influence they have on one another: our thoughts lose themselves in these contempla-

tions at first glimpse. Suppose we narrow our contemplation and confine our thoughts to this little canton. I mean this system of our sun, and the grosser masses of matter that visibly move around it. What various sorts of plants, animals, and intellectual bodily beings may there probably be on the other planets, infinitely different from those on our little spot of earth? We can in no way attain knowledge of them, not even of their outward shapes and parts, while we are confined to this earth. There are no natural means, either by sensation or by reflection, to convey certain ideas of them into our minds. They are out of the reach of those inlets of all our knowledge. We cannot so much as guess what sorts of furnishings and inhabitants those dwellings contain, much less have clear and distinct ideas of them.

4.3.25 *Or because of their minuteness.*—A great part of the various ranks of bodies in the universe escapes our notice by its remoteness; indeed, by far the greatest part does. There are other bodies that are no less hidden from us by their minuteness. These insensible corpuscles are the active parts of matter and the great instruments of nature. On them depend not only all the secondary qualities of bodies but also most of their natural operations. So our lack of precise, distinct ideas of their primary qualities keeps us in an incurable ignorance of what we want to know about them. I do not doubt that if we could discover the figure, size, texture, and motion of the minute constituent parts of any two bodies, we should know several of their operations on one another without trying them. We would know them as we now know the properties of a square or a triangle. Suppose we knew the mechanical properties of the particles of rhubarb, hemlock, opium, and a man. We would know them as a watchmaker knows the properties of a watch, by which it performs its operations, and of a file, which by rubbing on the wheels will alter the shape of any of them. We should then be able to tell beforehand that rhubarb will purge, hemlock kill, and opium make a man sleep. We could tell this as well as a watchmaker can tell that a little piece of paper laid on the balance will keep the watch from going until it is removed. He can also tell that if

some small part of it is rubbed by a file, the machine will entirely lose its motion and the watch will go no more. Silver dissolves in aqua fortis and gold in aqua regia, and not the other way round. That would then perhaps be no harder to know than it is for a smith to understand why turning one key will open a lock and turning another will not. But we lack senses sharp enough to discover the minute particles of bodies and give us ideas of their mechanical properties. As long as we do, we must be content to be ignorant of their properties and ways of operating. Nor can we be assured about them any further than a few trials we make are able to reach. And whether those trials will succeed again another time we cannot be certain.[7] This hinders our certain knowledge of universal truths about natural bodies. Here our reason carries us very little beyond particular matters of fact.

4.3.26 *Hence no science of bodies.*—However far human industry may advance useful and experimental philosophy in physical things, I am inclined to doubt that scientific knowledge will ever be within our reach. For we lack perfect and adequate ideas of those very bodies that are nearest to us and most under our command. Some bodies we have ranked into classes under names and think we are best acquainted with, yet we have only very imperfect and incomplete ideas even of these. Perhaps we may have distinct ideas of the several sorts of bodies that fall under the examination of our senses. But adequate ideas, I suspect, we have of none of them. The first of these will serve us for common use and conversation. But as long as we lack the second, we are not capable of scientific knowledge. Nor shall we ever be able to discover general, instructive, unquestionable truths about these bodies. In these matters we must not lay claim to certainty and demonstration. By their color, shape, taste, smell, and other sensible qualities, we have as clear and distinct ideas of sage and hemlock as we have of a circle and a triangle. But we have no ideas of the particular primary qualities of the minute parts of either plant, or of the other bodies we

7 Aqua fortis is nitric acid.

might apply them to. So we cannot tell what effects they will produce. And when we see those effects, we cannot so much as guess how they are produced, much less know it. Thus we have no ideas of the particular mechanical properties of the minute parts of the bodies within our view and reach, and so we are ignorant of their constitutions, powers, and operations. Of more remote bodies we are still more ignorant. We do not know so much as their outward shapes, or the sensible and grosser parts of their constitutions.

4.3.27 *Much less of spirits.*—This will show us, to begin with, how far our knowledge falls short of the whole extent even of material beings. Now add the consideration of the infinite number of spirits that may exist, and probably do. They are still more remote from our knowledge: we have no acquaintance with them and can form no distinct ideas of their various ranks and sorts. We shall then find that this cause of ignorance hides almost the whole intellectual world from us in an impenetrable obscurity. And that is certainly a greater and more beautiful world than the material one. We get a very few ideas of spirit, and superficial ones, if I may call them that, by reflecting on our own spirits. From these we gather the best we can about the Father of all spirits, the eternal, independent Author of them, of us, and of all things. Apart from these, we have no certain information even of the existence of other spirits except by revelation. Angels of all sorts are naturally beyond our discovery. There are likely more orders of such intelligences than of bodily substances, and our natural faculties give us no certain account of any of them at all. Every man has reason, from the words and actions of other men, to be satisfied that there are minds and thinking beings in them as well as in himself. And the knowledge of his own mind cannot allow a man who reflects to be ignorant that there is a God. But are there degrees of spiritual beings between us and the great God? Who is there who can come to know that by his own inquiry and ability? Much less do we have distinct ideas of their different natures, conditions, states, powers, and various constitutions, or of how they agree

with or differ from one another and from us. And therefore, in what concerns their different species and properties, we are in absolute ignorance.

4.3.28 *Second, lack of a discoverable connection between the ideas we have.*—Second: we have seen how small a part of the substantial beings in the universe the lack of ideas leaves open to our knowledge. Next, another cause of ignorance, of no less importance, is the lack of a discoverable connection between the ideas we do have. For wherever we lack that, we are utterly incapable of universal and certain knowledge. As in the former case, we are left only to observation and experiment. We need not be told how narrow and confined that is, or how far from general knowledge. I shall give a few instances of this cause of our ignorance and then leave it. It is evident that the bulk, figure, and motion of various bodies around us produce various sensations in us, such as colors, sounds, tastes, smells, pleasure and pain, and so on. These mechanical properties of bodies have no affinity at all with the ideas they produce in us. For there is no conceivable connection between any impulse of any sort of body and any perception of a color or smell that we find in our minds. So we can have no distinct knowledge of such operations beyond our experience. We can reason about them only as effects produced by the appointment of an infinitely wise agent, effects that wholly surpass our comprehension. Experience shows us that primary qualities produce in us the ideas of sensible secondary qualities. Yet we can in no way deduce those ideas from their bodily causes, nor find any correspondence or connection between the two. In the same way, on the other side, the operation of our minds on our bodies is just as inconceivable. How any thought should produce a motion in a body is as remote from the nature of our ideas as how any body should produce any thought in the mind. If experience did not convince us that it is so, the consideration of the things themselves could never in the least reveal it to us. These and the like have a constant and regular connection in the ordinary course of things. Yet that connection is not discoverable in the ideas themselves, which

appear to have no necessary dependence on one another. So we can attribute their connection to nothing but the arbitrary determination of the all-wise agent who has made them to be, and to operate as they do. He has done so in a way wholly beyond our weak understandings to conceive.

4.3.29 *Instances.*—In some of our ideas there are certain relations, bearings, and connections so visibly included in the nature of the ideas themselves that we cannot conceive any power whatsoever separating them. And in these alone we are capable of certain and universal knowledge. Thus the idea of a straight-sided triangle necessarily carries with it the equality of its angles to two right angles. Nor can we conceive that this relation, this connection, or these two ideas could possibly change. We cannot conceive it depending on some arbitrary power that chose to make it so or could make it otherwise. But the cohesion and continuity of the parts of matter; the production in us of sensations of colors, sounds, and so on, by impulse and motion; indeed, even the original rules and communication of motion: in all these we can discover no natural connection with any ideas we have. So we cannot help ascribing them to the arbitrary will and good pleasure of the wise architect. I need not, I think, mention here the resurrection of the dead, the future state of this globe of earth, and other such things. Everyone acknowledges that these depend wholly on the determination of a free agent. Some things, as far as our observation reaches, we constantly find proceeding regularly. We may conclude that they act by a law set for them, but it is a law that we do not know. Causes work steadily, and effects constantly flow from them. Yet their connections and dependencies are not discoverable in our ideas, and so we can have only an experimental knowledge of them. From all this it is easy to see what darkness we are wrapped in, and how little of being, and of the things that are, we are capable of knowing. And so we shall do no harm to our knowledge if we modestly reflect on our limits. We are so far from being able to comprehend the whole nature of the universe and all the things in it that we are not capable of a philo-

sophical knowledge even of the bodies that are around us and make up a part of us. We can have no universal certainty about their secondary qualities, powers, and operations. Various effects come every day to the notice of our senses, and of these we have sensitive knowledge so far. But for the two reasons already given, we must be content to be very ignorant of the causes, manner, and certainty of their production. In these matters we can go no further than what particular experience tells us about matters of fact. By analogy we can guess what effects similar bodies are likely to produce in other trials. But a perfect science of natural bodies, not to mention spiritual beings, is another matter. I think we are so far from being capable of any such thing that I conclude it is wasted labor to look for it.

4.3.30 *Third, failure to trace our ideas.*—Third, we may have adequate ideas, and there may be a certain and discoverable connection between them, and still we are often ignorant. This happens because we fail to trace the ideas we have or may have. We also fail to find the intermediate ideas that could show us what relation of agreement or disagreement they have with one another. Thus many people are ignorant of mathematical truths, and not from any imperfection of their faculties or uncertainty in the things themselves. They are ignorant for lack of application in acquiring, examining, and properly comparing those ideas. What has most hindered the proper tracing of our ideas has been, I suppose, the misuse of words. It has kept us from finding out their relations, and their agreements or disagreements with one another. Men can never truly seek, or certainly discover, the agreement or disagreement of ideas themselves while their thoughts flutter about or stick only in sounds of doubtful and uncertain meaning. Mathematicians abstract their thoughts from names. They accustom themselves to set before their minds the very ideas they want to consider, and not sounds in their place. In this way they have avoided a great part of the perplexity, muddling, and confusion that have so hindered men's progress in other parts of knowledge. For while men stick in words of undetermined and uncertain meaning,

they are unable to distinguish true from false, certain from probable, and consistent from inconsistent in their own opinions. This has been the fate or misfortune of a great many men of letters. As a result, very little has been added to the stock of real knowledge, compared with all the schools, disputes, and writings the world has been filled with. Meanwhile students were lost in the great wood of words. They did not know where they were, how far their discoveries had advanced, or what was lacking in their own or in the general stock of knowledge. Suppose men had dealt with discoveries in the material world as they have with those in the intellectual world, wrapping everything in the obscurity of uncertain and doubtful ways of talking. Then volumes might have been written on navigation and voyages, and theories and stories of zones and tides multiplied and disputed. Ships might even have been built and fleets sent out. None of it would ever have taught us the way beyond the equator. The antipodes would still be as unknown as when it was declared heresy to hold that there were any. But I have said enough about words, and about the misuse or careless use commonly made of them, so I shall say nothing more about it here.[8]

4.3.31 *Extent in respect of universality.*—So far we have examined the extent of our knowledge with respect to the various sorts of beings that exist. Its extent with respect to universality also deserves consideration, and in this regard our knowledge follows the nature of our ideas. If the ideas whose agreement or disagreement we perceive are abstract, our knowledge is universal. For what is known of such general ideas will be true of every particular thing in which that essence, that is, that abstract idea, is found. And what is once known of such ideas will be perpetually and forever true. So we must seek and find all general knowledge only in our own minds, and only the examination of our own ideas supplies it. Truths belonging to the essences of things (that is, to abstract ideas) are eternal. They are to be found out

8 The antipodes: people living on the opposite side of the globe. Augustine had doubted their existence, and Pope Zachary (748) condemned Virgil of Salzburg's alleged teaching of "another world" beneath the earth.

only by contemplating those essences, just as the existence of things is to be known only from experience. But I have more to say about this in the chapters where I shall speak of general and real knowledge. So this may suffice here as to the universality of our knowledge in general.

THE REALITY OF KNOWLEDGE

Locke answers the objection that knowledge of ideas may be mere fancy, beginning with simple ideas.

4.4.1 *Objection: knowledge placed in ideas may be all bare vision.*—I do not doubt that by now my reader may be inclined to think that all this while I have only been building a castle in the air. He may be ready to say to me: "What is the point of all this fuss? Knowledge, you say, is only the perception of the agreement or disagreement of our own ideas. But who knows what those ideas may be? Is anything so extravagant as the imaginings of men's brains? Where is the head that has no chimeras in it? Or suppose there is a sober and wise man. By your rules, what difference will there be between his knowledge and that of the most extravagant imagination in the world? They both have their ideas and perceive their agreement and disagreement with one another. If there is any difference between them, the advantage will be on the hot-headed man's side, since he has more ideas and livelier ones. So, by your rules, he will be the more knowledgeable. If all knowledge lies only in the perception of the agreement or disagreement of our own ideas, then the visions of an enthusiast and the reasonings of a sober man will be equally certain. It makes no difference how things are. So long as a man observes the agreement of his own imaginings and talks consistently with them, it is all truth, all certainty. Such castles in the air will be as strong fortresses of truth as the demonstrations of Euclid. On this approach, it is as certain knowledge, and as much a truth, that a harpy is not a centaur as that a square is not a circle.

"But what use is all this fine knowledge of men's own imaginings to someone who is inquiring into the reality of things? It

does not matter what men's fancies are. Only knowledge of things is to be prized. This alone gives value to our reasonings and makes one man's knowledge preferable to another's: that it is of things as they really are, and not of dreams and fancies."

4.4.2 *Answer: not so, where ideas agree with things.*—To this I answer as follows. Suppose our knowledge of our ideas ends in them and reaches no further, where something further is intended. Then our most serious thoughts will be of little more use than the daydreams of a disordered brain. The truths built on them will carry no more weight than the talk of a man who sees things clearly in a dream and states them with great assurance. But I hope, before I am done, to make it evident that this way of certainty, through the knowledge of our own ideas, goes a little further than bare imagination. And I believe it will appear that all the certainty of general truths a man has lies in nothing else.

4.4.3 —It is evident that the mind does not know things immediately, but only through the intervention of the ideas it has of them. Our knowledge, therefore, is real only so far as there is a conformity between our ideas and the reality of things. But what is to be the criterion here? The mind perceives nothing but its own ideas, so how shall it know that they agree with things themselves? This does not seem free of difficulty. Still, I think there are two sorts of ideas that we may be assured agree with things.

4.4.4 *As* 1. *All simple ideas do.*—First, the first are simple ideas. As has been shown, the mind can in no way make these for itself. So they must necessarily be the product of things operating on the mind in a natural way. These things produce in the mind the perceptions that the wisdom and will of our Maker have ordained and adapted them to produce. It follows that simple ideas are not fictions of our fancy. They are the natural and regular productions of things outside us that really operate on us. So they carry with them all the conformity that is intended, or that our condition requires. For they represent things to us under the appearances those things are fitted to produce in us. By them we are enabled to distinguish the sorts of particular

substances and to discern the states they are in. And so we can take them for our needs and apply them to our uses. Thus the idea of whiteness or bitterness, as it is in the mind, corresponds exactly to the power in any body to produce it there. So it has all the real conformity it can or should have with things outside us. And this conformity between our simple ideas and the existence of things is sufficient for real knowledge.

4.4.5 2. *All complex ideas, except those of substances.*—Second, all our complex ideas except those of substances are archetypes of the mind's own making. They are not intended to be copies of anything, and they are not referred to the existence of anything as their originals. So they cannot lack any conformity necessary to real knowledge. For what is not designed to represent anything but itself can never represent wrongly. Nor can it mislead us from the true apprehension of anything by being unlike it. And all our complex ideas are of this kind, except those of substances. As I have shown elsewhere, they are combinations of ideas which the mind puts together by its free choice, without considering any connection they have in nature. Hence in all these sorts the ideas themselves are considered as the archetypes, and things are regarded only insofar as they conform to them. So we cannot help being infallibly certain that all the knowledge we attain concerning these ideas is real and reaches things themselves. For in all our thoughts, reasonings, and discourses of this kind, we mean to speak of things only so far as they conform to our ideas. So in these we cannot fail of a certain and undoubted reality.

4.4.6 *Hence the reality of mathematical knowledge.*—I do not doubt that it will be readily granted that our knowledge of mathematical truths is not only certain but real knowledge. It is not the bare, empty vision of vain, meaningless chimeras of the brain. And yet, if we consider, we shall find that it is only of our own ideas. The mathematician considers the truth and properties belonging to a rectangle or circle only as they are in idea in his own mind. For it is possible that he has never in his life found either of them existing mathematically, that is, precisely true.

Yet the knowledge he has of any truths or properties belonging to a circle, or any other mathematical figure, is nonetheless true and certain, even of real existing things. For such propositions concern and mean real things only so far as those things really agree with the archetypes in his mind. Is it true of the idea of a triangle that its three angles are equal to two right angles? Then it is also true of a triangle wherever one really exists. Any other existing figure that does not exactly correspond to the idea of a triangle in his mind is not concerned in that proposition at all. And therefore he is certain that all his knowledge concerning such ideas is real knowledge. He means to speak of things only so far as they agree with those ideas of his. So he is sure that what he knows about those figures when they merely exist as ideas in his mind will also hold true of them when they have a real existence in matter. For what he is considering is simply those figures, which are the same wherever or however they exist.

MATHEMATICAL AND MORAL KNOWLEDGE ARE REAL

Ideas made by the mind as archetypes give real knowledge, even if nothing exactly matches them.

4.4.7 *And of moral.*—And hence it follows that moral knowledge is as capable of real certainty as mathematics. For certainty is only the perception of the agreement or disagreement of our ideas. And demonstration is nothing but the perception of such agreement through the intervention of other ideas, or mediums. Our moral ideas, like mathematical ones, are themselves archetypes, and so they are adequate and complete ideas. So all the agreement or disagreement we find in them will produce real knowledge, just as it does in mathematical figures.

4.4.8 *Existence not required to make it real.*—To attain knowledge and certainty, we need determinate ideas; and to make our knowledge real, the ideas must answer to their archetypes. No one should be surprised that I place the certainty of our knowledge in the consideration of our ideas, with so little care and

regard (as it may seem) for the real existence of things. For most of the discussions that occupy the thoughts and engage the disputes of those who claim to make it their business to inquire after truth and certainty will, I presume, turn out on examination to be general propositions and notions in which existence is not concerned at all. All the mathematicians' discussions about squaring the circle, conic sections, or any other part of mathematics are not concerned with the existence of any of those figures. Their demonstrations, which depend on their ideas, are the same whether or not any square or circle exists in the world. In the same way, the truth and certainty of moral discussions abstract from the lives of men and from the existence in the world of the virtues they treat. Cicero's *On Duties* is no less true because nobody in the world exactly practices his rules and lives up to the pattern of a virtuous man that he has given us. When he wrote, that pattern existed nowhere but in idea.[9] If it is true in speculation, that is, in idea, that murder deserves death, it will also be true in reality of any action that exists in conformity with that idea of murder. As for other actions, the truth of that proposition does not concern them. And so it is with all other species of things that have no other essences than those ideas which are in men's minds.

4.4.9 *Nor will it be less true or certain because moral ideas are of our own making and naming.*—But here it will be said: if moral knowledge is placed in the contemplation of our own moral ideas, and those ideas, like other modes, are of our own making, what strange notions there will be of justice and temperance! What confusion of virtues and vices, if everyone may make whatever ideas of them he pleases! There will be no confusion or disorder in the things themselves, nor in reasonings about them. There would be no more than there would be in mathematics if a man were to make a triangle with four corners, or a trapezium with four right angles. That would not disturb the demonstration, or change the properties of figures and their relations to one another. In plain English, it would only change the names of the

9 Cicero's *De Officiis* (44 BC), a standard text on moral duty.

figures, calling by one name what mathematicians ordinarily call by another. Let a man form for himself the idea of a figure with three angles, one of which is a right angle, and call it, if he likes, equilaterum, or trapezium, or anything else. The properties of that idea, and the demonstrations about it, will be the same as if he called it a right-angled triangle. I admit that the change of name, being an improper use of language, will at first confuse someone who does not know what idea it stands for. But as soon as the figure is drawn, the consequences and the demonstration are plain and clear. It is just the same in moral knowledge. Let a man have the idea of taking from others, without their consent, what their honest industry has given them possession of, and let him call this justice if he likes. Anyone who takes the name here without the idea attached to it will be mistaken, because he joins to that name another idea of his own. But strip the idea of that name, or take it as it is in the speaker's mind, and the same things will agree to it as if you had called it injustice. Admittedly, wrong names in moral discussions usually breed more disorder, because they are not so easily corrected as in mathematics. There the figure, once drawn and seen, makes the name useless and of no force. For what need is there of a sign when the thing signified is present and in view? But with moral names that cannot be done so easily and quickly, because of the many layers of composition that go into making up the complex ideas of those modes. Yet for all this, miscalling any of those ideas, contrary to the usual meaning of the words of that language, does not prevent us from having certain and demonstrative knowledge of their various agreements and disagreements. We need only, as in mathematics, carefully keep to the same precise ideas and trace them in their various relations to one another, without being led astray by their names. If we only separate the idea under consideration from the sign that stands for it, our knowledge proceeds equally well in the discovery of real truth and certainty, whatever sounds we use.

4.4.10 *Misnaming does not disturb the certainty of the knowledge.*— One more thing we should notice. Where God, or any other law-

maker, has defined any moral names, they have thereby made the essence of the species to which that name belongs, and there it is not safe to apply or use those names otherwise. In other cases, applying them contrary to the common usage of the country is merely an improper use of language. But even this does not disturb the certainty of that knowledge, which can still be had by duly contemplating and comparing those ideas, even when they are misnamed.

4.4.11 *Ideas of substances have their archetypes outside us.*—Third, there is another sort of complex ideas which, being referred to archetypes outside us, may differ from them, so that our knowledge about them may fall short of being real. Such are our ideas of substances. They consist of a collection of simple ideas supposedly taken from the works of nature. Yet they may differ from those works by having more ideas, or different ones, united in them than are found united in the things themselves. As a result they may, and often do, fail to conform exactly to the things themselves.

4.4.12 *So far as they agree with those, so far our knowledge concerning them is real.*—I say, then, that it takes more to have ideas of substances which, by conforming to things, may give us real knowledge. It is not enough, as it is with modes, to put together ideas that are not inconsistent with one another, even though they never existed together before. For example, the ideas of sacrilege or perjury were as real and true ideas before any such act took place as after. But our ideas of substances are supposed to be copies, and are referred to archetypes outside us. So they must always be taken from something that exists or has existed. They must not consist of ideas put together as our thoughts please, without any real pattern they were taken from, even if we can perceive no inconsistency in such a combination. The reason is this. We do not know the real constitution of substances on which our simple ideas depend, and which is really the cause why some of them are strictly united with one another and others excluded. So there are very few of them that we can be sure are, or are not, inconsistent in nature, beyond what

experience and sensible observation reach. Here, then, is the foundation of the reality of our knowledge concerning substances. All our complex ideas of them must be such, and only such, as are made up of simple ideas that have been discovered to coexist in nature. And our ideas, being true in this way, though perhaps not very exact copies, are still the subjects of real knowledge of them, as far as we have any. That knowledge, as has already been shown, will not be found to reach very far. But as far as it does reach, it will still be real knowledge. Whatever ideas we have, the agreement we find they have with others will still be knowledge. If those ideas are abstract, it will be general knowledge. But to make it real knowledge concerning substances, the ideas must be taken from the real existence of things. Whatever simple ideas have been found to coexist in any substance, these we may confidently join together again, and so make abstract ideas of substances. For whatever has once been united in nature may be united again.

SPECIES, AND PEOPLE WITHOUT REASON

Locke argues from severely intellectually disabled people and malformed births that shape does not fix a species.

4.4.13 *In our inquiries about substances, we must consider ideas, and not confine our thoughts to names, or to species supposed to be marked out by names.*—Suppose we considered this rightly, and did not confine our thoughts and abstract ideas to names, as if there were, or could be, no other sorts of things than those that known names had already determined and, as it were, marked out. Then we would think about things with more freedom and less confusion than perhaps we do. It might be thought a bold paradox, if not a very dangerous falsehood, if I were to say that some severely intellectually disabled people, who have lived for forty years without any appearance of reason, are something between a man and a beast. But this prejudice rests on nothing but a false supposition: that these two names, man and beast, stand for distinct species so marked out by real essences that no

other species can come between them. We should rather abstract from those names, and from the supposition of such specific essences made by nature, in which all things with the same name exactly and equally shared; we should not imagine that there are a fixed number of these essences, in which all things were cast and formed as in molds. If we did this, we would find that the idea of the shape, motion, and life of a man without reason is just as distinct an idea as the idea of the shape of an ass with reason would be. It makes just as distinct a sort of thing from both man and beast, and would be a species of animal between the two, or distinct from both.

4.4.14 *Objection against a severely intellectually disabled person's being something between man and beast, answered.*—Here everybody will be ready to ask: if such people may be supposed to be something between man and beast, what, please, are they? I answer: they are simply what we call them. Our name for them is as good a word to signify something different from what man or beast signifies as the names man and beast are to have meanings different from each other. This, if well considered, would settle the matter and show my meaning without more ado. But I know the zeal of some men, which enables them to spin out consequences and to see religion threatened whenever anyone ventures to depart from their ways of speaking. So I can foresee what names a proposition like this is likely to be charged with. No doubt it will be asked: if such people are something between man and beast, what will become of them in the other world? To this I answer, first, that it is not my concern to know or inquire. To their own Master they stand or fall. It will make their state neither better nor worse whether we decide anything about it or not.[10] They are in the hands of a faithful Creator and a bountiful Father, who does not dispose of his creatures according to our narrow thoughts or opinions, nor distinguish them according to names and species of our devising. We know so little of this present world we are in. So we may, I think, be content not to be dogmatic in defining the different states creatures will come

10 "To their own Master they stand or fall" echoes Romans 14:4.

into when they leave this stage. It may be enough for us that he has made known to all who are capable of instruction, discourse, and reasoning that they will come to an account, and receive according to what they have done in this body.[11]

4.4.15 But, second, I answer that the force of these men's questions (namely, "Will you deprive the severely intellectually disabled of a future state?") rests on one of two suppositions, both false. The first is that everything that has the outward shape and appearance of a man must necessarily be destined for an immortal existence after this life. The second is that whatever is of human birth must be. Take away these imaginings, and such questions will be groundless and ridiculous. Some think there is nothing more than an accidental difference between themselves and such people, the essence in both being exactly the same. I ask them, then, to consider whether they can imagine immortality attached to any outward shape of the body. The very proposing of it is, I suppose, enough to make them disown it. No one I have ever heard of, however immersed in matter, has granted such excellence to any shape of the gross, sensible, outward parts as to affirm that eternal life is due to it, or is a necessary consequence of it. Nor has anyone claimed that any mass of matter, after its dissolution here, should be restored hereafter to an everlasting state of sense, perception, and knowledge, merely because it was molded into this or that shape and had a particular arrangement of its visible parts. An opinion like this, placing immortality in a certain superficial shape, throws out of doors all consideration of soul or spirit. Yet on that account alone some corporeal beings have so far been concluded to be immortal, and others not. This is to attribute more to the outside of things than to the inside, and to place a man's excellence more in the external shape of his body than in the internal perfections of his soul. Man has above other material beings the great and inestimable advantage of immortality and everlasting life. This opinion is little better than attaching that advantage, I say, to the cut of his beard or the fashion of his coat. For this or that out-

11 The last words echo 2 Corinthians 5:10.

ward mark of our bodies no more carries with it the hope of eternal duration than the fashion of a man's suit gives him reasonable grounds to imagine that it will never wear out, or that it will make him immortal. Perhaps it will be said that nobody thinks the shape makes anything immortal, but that the shape is the sign of a rational soul within, which is immortal. I wonder who made it the sign of any such thing, for merely saying so will not make it so. It would take some proofs to persuade anyone of it. No shape that I know of speaks any such language. Consider the dead body of a man, in which there is no more appearance or action of life than in a statue. It may just as rationally be concluded that it has a living soul in it because of its shape, as that there is a rational soul in a severely intellectually disabled person because he has the outside of a rational creature. Yet over the whole course of his life his actions show far fewer marks of reason than are found in many a beast.

4.4.16 *Malformed births.*—But, you say, it is the offspring of rational parents, and so must be concluded to have a rational soul. I do not know by what logic you must conclude that. I am sure it is a conclusion that people nowhere accept. For if they did, they would not venture, as they everywhere do, to destroy malformed and misshapen births. Yes, you say, but these are malformed births, not men. Let them be so; what, then, will your severely intellectually disabled person be, drooling, without understanding, and unteachable? Shall a defect in the body make a malformed birth of this kind, and a defect in the mind not? Yet the mind is the far nobler part and, as the common phrase goes, the far more essential one. Shall the lack of a nose or a neck make such a birth, and put such offspring out of the rank of men, and the lack of reason and understanding not? This is to bring everything back to what was just now refuted. It is to place everything in the shape, and to take the measure of a man only by his outside. In the ordinary way of reasoning on this matter, people do lay the whole weight on the shape, and reduce the whole essence of the species man (as they make it) to the outward shape, however unreasonable that may be and how-

ever much they disown it. To show this, we need only trace their thoughts and practice a little further, and it will plainly appear. The well-shaped person without reason is a man and has a rational soul, though it does not appear. This is beyond doubt, you say. Make the ears a little longer and more pointed, and the nose a little flatter than usual, and then you begin to hesitate. Make the face still narrower, flatter, and longer, and then you are at a loss. Add more and more of the likeness of a brute to it, and let the head be entirely that of some other animal, and at once it is a malformed birth, not a man. Then it is demonstrated, as far as you are concerned, that it has no rational soul and must be destroyed. Where now, I ask, is the exact measure of the outermost limits of the shape that carries a rational soul with it? For there have been human fetuses produced that were half beast and half man, and others three parts one and one part the other. So it is possible that they may come in every degree of approach to the one shape or the other, with various degrees of mixture of the likeness of a man and of a brute. I would therefore gladly know what those precise features are which, on this hypothesis, are or are not capable of having a rational soul joined to them. What sort of outside is the sure sign that there is, or is not, such an inhabitant within? Until that is settled, we talk at random about man. I fear we always will, so long as we give ourselves up to certain sounds and to imaginings of settled and fixed species in nature, we know not what. But after all, I ask that one thing be considered. Those who think they have answered the difficulty by telling us that a misshapen fetus is a malformed birth, and no man, fall into the very fault they are arguing against, by setting up a species between man and beast. For what else, I ask, is their malformed birth in this case (if the term signifies anything at all) but something that is neither man nor beast but shares somewhat in each? And the severely intellectually disabled person mentioned above is just that. So necessary is it to give up the common notion of species and essences, if we want truly to look into the nature of things. We must examine them by what our faculties can discover in them as they

exist, and not by the groundless fancies that have been adopted about them.

4.4.17 *Words and species.*—I have mentioned this here because I think we cannot be too careful that words and species, in the ordinary notions of them we have grown used to, do not deceive us. For I am inclined to think that this is one great obstacle to our clear and distinct knowledge, especially with respect to substances. A great part of the difficulties about truth and certainty have arisen from it. If we accustomed ourselves to separate our contemplations and reasonings from words, we could to a great extent remedy this inconvenience within our own thoughts. But it would still trouble us in our discussions with others, as long as we held the opinion that species and their essences are anything other than our abstract ideas (such as they are) with names attached to them as their signs.

4.4.18 *Recapitulation.*—Wherever we perceive the agreement or disagreement of any of our ideas, there is certain knowledge. Wherever we are sure those ideas agree with the reality of things, there is certain real knowledge. I have given here the marks of this agreement of our ideas with the reality of things, and so I think I have shown what certainty, real certainty, consists in. Whatever it was to others, this was, I confess, formerly one of those desiderata, those things wanted, that I greatly missed.

TRUTH IN GENERAL

Truth is the right joining or separating of signs, in mental and in verbal propositions.

4.5.1 *What truth is.*—"What is truth?" was a question asked many ages ago. All mankind either seek it or claim to seek it. So it must be worth our while to examine carefully what it consists in, and so to acquaint ourselves with its nature as to observe how the mind distinguishes it from falsehood.[12]

4.5.2 *A right joining or separating of signs, that is, of ideas or words.* —Truth, then, seems to me, in the proper sense of the word, to signify nothing but the joining or separating of signs, as the things signified by them agree or disagree with one another. The joining or separating of signs meant here is what by another name we call a proposition. So truth properly belongs only to propositions, of which there are two sorts, namely mental and verbal, just as there are two sorts of signs commonly used, namely ideas and words.

4.5.3 *Which make mental or verbal propositions.*—To form a clear notion of truth, it is very necessary to consider truth of thought and truth of words separately. Yet it is very difficult to treat them apart. For in treating mental propositions we cannot avoid using words, and then the examples given of mental propositions immediately cease to be merely mental and become verbal. A mental proposition is nothing but a bare consideration of the ideas as they are in our minds, stripped of names. So such propositions lose the nature of purely mental propositions as soon as they are put into words.

4.5.4 *Mental propositions are very hard to treat of.*—What makes it still harder to treat mental and verbal propositions separately is that most men, if not all, use words instead of ideas in their thinking and reasoning within themselves. They do so at least when the subject of their meditations contains complex ideas. This is strong evidence of the imperfection and uncertainty of our ideas of that kind. If attentively used, it may serve as a mark to show us which things we have clear, perfect, established ideas of, and which not. For if we closely observe the way our mind proceeds in thinking and reasoning, we shall find, I suppose, that when we make any propositions within our own thoughts about white or black, sweet or bitter, a triangle or a circle, we can, and often do, frame the ideas themselves in our minds without reflecting on the names. But when we want to consider or make propositions about more complex ideas, such as those of a man, vitriol, fortitude, or glory, we usually put the

12 Pilate's question to Jesus, John 18:38.

name for the idea. The ideas these names stand for are for the most part imperfect, confused, and undetermined. So we reflect on the names themselves, because they are clearer, more certain and distinct, and come to mind more readily than the pure ideas. And so we use these words instead of the ideas themselves, even when we want to meditate and reason within ourselves and make tacit mental propositions. With substances, as has already been noted, this is caused by the imperfection of our ideas: we make the name stand for the real essence, of which we have no idea at all. With modes, it is caused by the great number of simple ideas that go into making them up. For since many of them are compounded, the name comes to mind much more easily than the complex idea itself. That idea takes time and attention to recollect and represent exactly to the mind, even for those who have previously taken the trouble to do it. Some people have most of the common words of their language ready in memory, yet perhaps never troubled themselves in their whole lives to consider what precise ideas most of those words stood for. For them it is utterly impossible. Some confused or obscure notions have served their turn. Many who talk a great deal about religion and conscience, church and faith, power and right, obstructions and humors, melancholy and choler, would perhaps have little left in their thoughts and meditations if one asked them to think only of the things themselves. They would have to set aside those words, with which they so often confuse others, and not seldom themselves as well.[13]

4.5.5 *Being nothing but the joining or separating of ideas without words.*—But to return to the consideration of truth: we must, I say, note two sorts of propositions that we are capable of making.

First, mental propositions. In these the ideas in our understandings are put together or separated by the mind without the

13 Obstructions, humors, melancholy and choler were terms of the humoral medicine of Locke's day.

use of words, as it perceives or judges of their agreement or disagreement.

Second, verbal propositions, which are words, the signs of our ideas, put together or separated in affirmative or negative sentences. By this way of affirming or denying, these signs made by sounds are, as it were, put together or separated from one another. So a proposition consists in joining or separating signs. Truth consists in putting those signs together or separating them according as the things they stand for agree or disagree.

4.5.6 *When mental propositions contain real truth, and when verbal ones do.*—Everyone's experience will satisfy him that the mind, by either perceiving or supposing the agreement or disagreement of any of its ideas, tacitly puts them within itself into a kind of proposition, affirmative or negative. I have tried to express this by the terms putting together and separating. This action of the mind is familiar to every thinking and reasoning man. But it is easier to conceive by reflecting on what goes on in us when we affirm or deny than to explain in words. Suppose a man has in his head the idea of two lines, namely the side and the diagonal of a square, the diagonal being an inch long. He may also have the idea of dividing that line into a certain number of equal parts: for example, into five, ten, a hundred, a thousand, or any other number. And he may have the idea of that inch-long line being divisible, or not divisible, into such equal parts that a certain number of them will equal the side. Now, whenever he perceives, believes, or supposes that such a kind of divisibility agrees or disagrees with his idea of that line, he, as it were, joins or separates those two ideas, namely the idea of that line and the idea of that kind of divisibility. And so he makes a mental proposition, which is true or false according as such a kind of divisibility, a divisibility into such aliquot parts, really does or does not agree with that line. When ideas are put together or separated in the mind as they, or the things they stand for, agree or not, that is what I may call mental truth. But truth of words is something more. It is the affirming or denying of words of one another as the ideas they stand for agree or dis-

agree. And this again is of two kinds: either purely verbal and trifling, which I shall speak of in Chapter 8, or real and instructive, which is the object of the real knowledge we have already spoken of.

4.5.7 *Objection against verbal truth: that on this account it may all be chimerical.*—But here the same doubt is apt to arise about truth as arose about knowledge. It will be objected that truth, on this account, is nothing but the joining and separating of words in propositions as the ideas they stand for agree or disagree in men's minds. If so, the knowledge of truth is not as valuable a thing as it is taken to be, nor worth the effort and time men spend searching for it. For it amounts to no more than the conformity of words to the chimeras of men's brains. Who does not know what odd notions many men's heads are filled with, and what strange ideas all men's brains are capable of? But if we stop here, by this rule we know the truth of nothing but the visionary words in our own imaginations. We have no other truth than what concerns harpies and centaurs as much as men and horses. For those and the like may be ideas in our heads, and have their agreement and disagreement there just as the ideas of real beings do, and so have equally true propositions made about them. And it will be quite as true a proposition to say all centaurs are animals as that all men are animals, and the certainty of the one as great as of the other. For in both propositions the words are put together according to the agreement of the ideas in our minds. The agreement of the idea of animal with that of centaur is as clear and visible to the mind as the agreement of the idea of animal with that of man. So these two propositions are equally true, equally certain. But what use is all such truth to us?

4.5.8 *Answered: real truth is about ideas agreeing with things.*—The preceding chapter distinguished real from imaginary knowledge. What was said there might suffice here as an answer to this doubt, to distinguish real truth from chimerical or, if you like, merely nominal truth, since both rest on the same foundation. Yet it may not be amiss to consider here again that,

although our words signify nothing but our ideas, still they are meant through our ideas to signify things. So the truth they contain when put into propositions will be only verbal when they stand for ideas in the mind that do not agree with the reality of things. And so truth, like knowledge, may well fall under the distinction of verbal and real. Verbal truth is only that in which terms are joined according to the agreement or disagreement of the ideas they stand for, without regard to whether our ideas are such as really have, or can have, an existence in nature. But propositions contain real truth when these signs are joined as our ideas agree, and when our ideas are such as we know can exist in nature. In the case of substances, we cannot know this except by knowing that such things have existed.

4.5.9 *Falsehood is the joining of names otherwise than their ideas agree.*—Truth is the marking down in words of the agreement or disagreement of ideas as it is. Falsehood is the marking down in words of the agreement or disagreement of ideas otherwise than it is. And only so far as these ideas, thus marked by sounds, agree with their archetypes is the truth real. The knowledge of this truth consists in knowing what ideas the words stand for, and in perceiving the agreement or disagreement of those ideas as it is marked by those words.

4.5.10 *General propositions to be treated of more at length.*—Words are regarded as the great channels of truth and knowledge. In conveying and receiving truth, and commonly in reasoning about it, we use words and propositions. So I shall inquire more at length into what the certainty of real truths contained in propositions consists in, and where it is to be had. I shall try to show in what sort of universal propositions we are capable of being certain of their real truth or falsehood. I shall begin with general propositions, as those that most occupy our thoughts and exercise our contemplation. General truths are what the mind looks for most, as those that most enlarge our knowledge. By their comprehensiveness they satisfy us about many particulars at once, and so they enlarge our view and shorten our way to knowledge.

4.5.11 *Moral and metaphysical truth.*—Besides truth taken in the strict sense mentioned above, there are other sorts of truth. 1. Moral truth, which is speaking of things according to the persuasion of our own minds, even if the proposition we speak does not agree with the reality of things. 2. Metaphysical truth, which is nothing but the real existence of things in conformity with the ideas to which we have attached their names. This seems to consist in the very being of things. Yet when considered a little more closely, it will turn out to include a tacit proposition, by which the mind joins that particular thing to the idea it had previously settled, with a name attached. But these considerations of truth either have been noticed before or are not much to our present purpose. So it may be enough here merely to have mentioned them.

UNIVERSAL PROPOSITIONS

Few universal propositions about substances can be known to be true, since real essences are unknown.

4.6.1 *Treating of words is necessary to knowledge.*—The best and surest way to clear and distinct knowledge is to examine and judge ideas by themselves, with their names quite set aside. Yet because of the prevailing custom of using sounds for ideas, I think this is very seldom practiced. Anyone may observe how common it is for names to be used instead of the ideas themselves, even when men think and reason within their own breasts. This is especially so if the ideas are very complex and made up of a large collection of simple ones. This makes the consideration of words and propositions so necessary a part of a treatise on knowledge that it is very hard to speak intelligibly of the one without explaining the other.

4.6.2 *General truths can hardly be understood except in verbal propositions.*—All the knowledge we have is only of particular or general truths. Whatever may be done with the former, it is evident that the latter can never be well made known, and is very seldom grasped, except as conceived and expressed in

words. Yet the latter is, with reason, what is most sought after. So it is not out of our way, in examining our knowledge, to inquire into the truth and certainty of universal propositions.

4.6.3 *Certainty is twofold: of truth and of knowledge.*—The danger everywhere is the doubtfulness of terms. So that we may not be misled by it here, it is fitting to observe that certainty is twofold: certainty of truth and certainty of knowledge. Certainty of truth is when words are so put together in propositions as to express exactly the agreement or disagreement of the ideas they stand for, as it really is. Certainty of knowledge is perceiving the agreement or disagreement of ideas as expressed in any proposition. This is what we usually call knowing, or being certain of, the truth of any proposition.

4.6.4 *No proposition can be known to be true where the essence of each species mentioned is not known.*—Now, since we cannot be certain of the truth of any general proposition unless we know the precise bounds and extent of the species its terms stand for, we need to know the essence of each species, which is what constitutes and bounds it. In all simple ideas and modes, this is not hard to do. For in these the real and nominal essence are the same. Or, what comes to the same thing, the abstract idea that the general term stands for is the only essence and boundary the species has or can be supposed to have. So there can be no doubt how far the species extends, or what things are included under each term. Clearly, these are all the things that conform exactly to the idea the term stands for, and no others. But in substances, a real essence distinct from the nominal one is supposed to constitute, determine, and bound the species, and so the extent of the general word is very uncertain. Since we do not know this real essence, we cannot know what is or is not of that species, and consequently what can or cannot be affirmed of it with certainty. So when we speak of a man, or gold, or any other species of natural substances as constituted by a precise, real essence, we cannot be certain of the truth of any affirmation or denial made about it. By such an essence I mean one that nature regularly imparts to every individual of that kind, and that

makes it belong to that species. Take "man" or "gold" in this sense, used for species of things constituted by real essences different from the complex idea in the speaker's mind: they then stand for we know not what. And the extent of these species, bounded in this way, is so unknown and undetermined that it is impossible to affirm with any certainty that all men are rational, or that all gold is yellow. But suppose the nominal essence is kept to as the boundary of each species, and people extend a general term only to the particular things in which the complex idea it stands for is found. Then they are in no danger of mistaking the bounds of each species, and cannot be in doubt, on this account, whether any proposition is true or not. I have chosen to explain this uncertainty of propositions in this scholastic way, using the terms "essences" and "species," precisely to show how absurd and troublesome it is to think of them as any kind of reality other than bare abstract ideas with names attached to them. The species of things are nothing but our sorting of them under general names, according as they agree with various abstract ideas of which we make those names the signs. To suppose they are anything more is to confuse truth and bring uncertainty into every general proposition that can be made about them. For people not steeped in scholastic learning, these things might be treated in a better and clearer way. But those wrong notions of essences or species have taken root in the minds of most people who have absorbed any of the learning that has prevailed in this part of the world. They must therefore be exposed and removed, to make way for a use of words that carries certainty with it.

4.6.5 *This concerns substances in particular.*—The names of substances, then, whenever they are made to stand for species supposed to be constituted by real essences that we do not know, cannot convey certainty to the understanding. We cannot be sure of the truth of general propositions made up of such terms. The reason is plain. How can we be sure that this or that quality is in gold, when we do not know what is or is not gold? For in this way of speaking nothing is gold except what shares in a cer-

tain essence. Since we do not know that essence, we cannot know where it is or is not. So we cannot be sure that any parcel of matter in the world is, or is not, gold in this sense. We are incurably ignorant whether it has or lacks what makes anything be called gold, that is, the real essence of gold, of which we have no idea at all. This is as impossible for us to know as it is for a blind man to tell in which flower the color of a pansy is or is not to be found, when he has no idea of the color of a pansy at all. Or suppose we could (which is impossible) know for certain where a real essence we do not know is to be found: for example, in which parcels of matter the real essence of gold is. We still could not be sure that this or that quality could truly be affirmed of gold. For it is impossible for us to know that this or that quality or idea has a necessary connection with a real essence of which we have no idea at all, whatever species that supposed real essence may be imagined to constitute.

4.6.6 *The truth of few universal propositions concerning substances can be known.*—On the other hand, the names of substances, when used as they should be, for the ideas people have in their minds, carry a clear and determinate meaning. Yet even then they will not let us make many universal propositions whose truth we can be certain of. This is not because, used this way, we are uncertain what things they signify. It is because the complex ideas they stand for are combinations of simple ones that carry no discoverable connection or incompatibility with any but a very few other ideas.

4.6.7 *Because the coexistence of ideas can be known in few cases.*—The complex ideas that our names for the species of substances properly stand for are collections of qualities that have been observed to coexist in an unknown substratum, which we call substance. But we cannot know for certain what other qualities necessarily coexist with such combinations, unless we can discover their natural dependence. In their primary qualities we can go only a very little way in this. In all their secondary qualities we can discover no connection at all, for the reasons given in Chapter 3, namely: 1. Because we do not know the real constitu-

tions of substances, on which each secondary quality particularly depends. 2. If we did know that, it would give us only experimental (not universal) knowledge, and would reach with certainty no further than that bare instance. For our understandings can discover no conceivable connection between any secondary quality and any modification whatever of any of the primary ones. And so there are very few general propositions to be made about substances that can carry undoubted certainty with them.

4.6.8 *The example of gold.*—"All gold is fixed" is a proposition whose truth we cannot be certain of, however universally it is believed. Suppose someone follows the useless fancy of the schools and takes the term "gold" to stand for a species of things marked out by nature through a real essence belonging to it. Then it is evident that he does not know which particular substances are of that species, and so cannot affirm anything universally of gold with certainty. But he may instead make "gold" stand for a species determined by its nominal essence. Let the nominal essence be, for example, the complex idea of a body of a certain yellow color, malleable, fusible, and heavier than any other known. In this proper use of the word "gold," there is no difficulty in knowing what is or is not gold. Still, no other quality can be affirmed or denied of gold universally and with certainty, except one that has a discoverable connection or inconsistency with that nominal essence. Fixedness, for example, has no necessary connection that we can discover with the color, weight, or any other simple idea in our complex one, or with the whole combination together. So it is impossible for us to know for certain the truth of this proposition: that all gold is fixed.

4.6.9 There is no discoverable connection between fixedness and the color, weight, and other simple ideas of that nominal essence of gold. In the same way, if we make our complex idea of gold a body that is yellow, fusible, ductile, heavy, and fixed, we shall be just as uncertain about its solubility in aqua regia, and for the same reason. For we can never, from considering the ideas themselves, affirm or deny with certainty that such a body

is soluble in aqua regia, when its complex idea is made up of yellow, very heavy, ductile, fusible, and fixed. The same goes for the rest of its qualities. I would be glad to meet with one general affirmation about any quality of gold that anyone can know for certain to be true. No doubt it will immediately be objected: is not "all gold is malleable" a universal proposition? I answer that it is a very certain proposition, if malleability is part of the complex idea the word "gold" stands for. But then nothing is affirmed of gold here except that that sound stands for an idea in which malleability is contained. Truth and certainty of this sort are like saying that a centaur is four-footed. But if malleability is not part of the specific essence the name "gold" stands for, then clearly "all gold is malleable" is not a certain proposition. For let the complex idea of gold be made up of whichever of its other qualities you please: malleability will not appear to depend on that complex idea, or to follow from any simple idea contained in it. Malleability's connection with those other qualities (if it has any) comes only through the real constitution of its insensible parts. Since we do not know that constitution, we cannot possibly perceive the connection unless we could discover what ties them together.

4.6.10 *As far as any such coexistence can be known, universal propositions may be certain. But this goes only a little way, because*—The more of these coexisting qualities we unite into one complex idea under one name, the more precise and determinate we do make the meaning of that word. But we never thereby make it more capable of universal certainty with respect to other qualities not contained in our complex idea. For we do not perceive their connection with, or dependence on, one another. We are ignorant both of the real constitution in which they are all grounded and of how they flow from it. For the chief part of our knowledge about substances is not, as in other things, simply about the relation of two ideas that may exist separately. It is about the necessary connection and coexistence of several distinct ideas in the same subject, or about their incompatibility in coexisting. Suppose we could begin at the other end. We would

discover what that color consisted in, what made a body lighter or heavier, and what texture of parts made it malleable, fusible, and fixed, and fit to be dissolved in this sort of liquid and not in another. If, I say, we had an idea of bodies like this, and could perceive what all sensible qualities originally consist in and how they are produced, we might form ideas of them that would supply us with material for more general knowledge. They would enable us to make universal propositions carrying general truth and certainty with them. But our complex ideas of the sorts of substances are very remote from the internal real constitution on which their sensible qualities depend. They are made up of nothing but an imperfect collection of the apparent qualities our senses can discover. As long as this is so, there can be few general propositions about substances whose real truth we can be assured of for certain. For there are only a few simple ideas of whose connection and necessary coexistence we can have certain and undoubted knowledge. Take all the secondary qualities of substances, and the powers relating to them. I imagine that no two of them can be named whose necessary coexistence, or incompatibility in coexisting, can be known for certain. The only exception is qualities of the same sense, which necessarily exclude one another, as I have shown elsewhere. No one, I think, can know for certain from the color of a body what smell, taste, sound, or tangible qualities it has, or what alterations it can make in other bodies or receive from them. The same may be said of sound or taste, and so on. Our specific names of substances stand for collections of such ideas, so it is no wonder that we can make very few general propositions with them that have undoubted real certainty. Still, a complex idea of some sort of substance may contain a simple idea whose necessary coexistence with some other can be discovered. So far as it does, universal propositions can be made about it with certainty. For example, suppose someone could discover a necessary connection between malleability and the color or weight of gold, or any other part of the complex idea signified by that name. He could then make a certain universal proposition about

gold in this respect. The real truth of the proposition "all gold is malleable" would be as certain as that of "the three angles of every rectilinear triangle are equal to two right angles."

THINGS DEPEND ON THEIR SURROUNDINGS

The qualities of bodies depend on unseen outside causes, perhaps even on the remotest stars.

4.6.11 *The qualities that make up our complex ideas of substances depend mostly on external, remote, and unperceived causes.*—Suppose our ideas of substances showed us what real constitutions produce the sensible qualities we find in them, and how those qualities flow from them. Then we could find out their properties, and discover what qualities they had or lacked, more certainly by the specific ideas of their real essences in our own minds than we now can by our senses. To know the properties of gold, it would then be no more necessary that gold should exist, and that we should experiment on it, than it is necessary for a triangle to exist in any matter in order for us to know the properties of a triangle. The idea in our minds would serve for the one as well as for the other. But we are so far from being admitted into the secrets of nature that we hardly ever so much as approach the first entrance to them. We usually consider each of the substances we meet with as an entire thing by itself, having all its qualities in itself and independent of other things. For the most part we overlook the operations of the invisible fluids that surround them. Yet most of the qualities we notice in them depend on the motions and operations of those fluids, and these are the very qualities we treat as their inherent marks of distinction, by which we know and name them. Put a piece of gold anywhere by itself, separated from the reach and influence of all other bodies, and it will immediately lose all its color and weight. It might lose its malleability too, which, for all I know, would change into complete brittleness. Water, for which fluidity is to us an essential quality, would cease to be fluid if left to itself. Inanimate bodies, then, owe so much of their present

state to other bodies outside them that they would not be what they appear to us if the bodies surrounding them were removed. If that is so, it is even more true of plants, which are nourished, grow, and produce leaves, flowers, and seeds in a constant succession. And if we look a little more closely at the state of animals, we shall find that for life, motion, and the most considerable qualities to be observed in them, they depend wholly on external causes, and on qualities of other bodies that are no part of them. They depend on these so completely that they cannot survive a moment without them. Yet the bodies they depend on are little noticed, and form no part of the complex ideas we frame of those animals. Take away the air for even a minute from most living creatures, and they immediately lose sense, life, and motion. The need to breathe has forced this into our knowledge. But on how many other external, and possibly very remote, bodies do the springs of these admirable machines depend, which are not commonly observed or even thought of! And how many are there that the most rigorous inquiry can never discover! The inhabitants of this spot of the universe are so many millions of miles away from the sun. Yet they depend so much on the properly tempered motion of particles coming from it, or set in motion by it, that even a small change would be fatal. If this earth were moved even a small part of that distance from its present position, and placed a little farther from or nearer to that source of heat, it is more than probable that most of the animals on it would immediately perish. For we find them so often destroyed by too much or too little of the sun's warmth, to which an accidental position exposes them in some parts of this little globe of ours. The qualities observed in a lodestone must have their source far beyond the bounds of that body. Invisible causes often wreak havoc on various kinds of animals. Some of them (so we are told) die for certain merely from crossing the equator, and it is certain that others die from being moved into a neighboring country. All this clearly shows that the concurrence and operations of various bodies are absolutely necessary to make these animals what they appear to us, and to

preserve the qualities by which we know and distinguish them, although they are seldom thought to have anything to do with those bodies. We are quite off the track, then, when we think that things contain within themselves the qualities that appear to us in them. We search in vain within the body of a fly or an elephant for the constitution on which the qualities and powers we observe in them depend. To understand those qualities rightly, we may perhaps need to look not only beyond this earth and atmosphere of ours, but even beyond the sun, or the most remote star our eyes have yet discovered. For it is impossible for us to determine how far the being and operation of particular substances on this globe of ours depend on causes wholly beyond our view. We see and perceive some of the motions and grosser operations of things around us here. But we cannot notice or comprehend where the streams come from that keep all these intricate machines in motion and repair, or how they are conveyed and modified. The great parts and wheels, so to speak, of this stupendous structure of the universe may, for all we know, be closely connected and dependent on one another in their influence and operations. Suppose one of the stars or great bodies, incomprehensibly remote from us, were to cease to exist or to move as it does. Things in this dwelling of ours might then take on quite another appearance, and cease to be what they are. This much is certain: things, however self-contained and complete they seem in themselves, are only dependents of other parts of nature for the very features we chiefly notice in them. They owe their observable qualities, actions, and powers to something outside them. There is no part of nature we know of so complete and perfect that it does not owe its being, and its excellences, to its neighbors. We must not confine our thoughts within the surface of any body, but look a great deal farther, if we are to understand perfectly the qualities that are in it.

4.6.12 If this is so, it is no wonder that we have very imperfect ideas of substances, and that the real essences on which their properties and operations depend are unknown to us. We cannot discover even the size, shape, and texture of their minute

and active parts, which are really in them. Still less can we discover the different motions and impulses made in and on them by bodies from outside. Yet on these depends, and by these is formed, the greatest and most remarkable part of the qualities we observe in them, of which our complex ideas of them are made up. This consideration alone is enough to end all our hopes of ever having ideas of their real essences. And as long as we lack these, the nominal essences we use in their place will supply us only very sparingly with general knowledge, or with universal propositions capable of real certainty.

4.6.13 *Judgment may reach farther, but that is not knowledge.*—So we should not be surprised if certainty is found in very few general propositions about substances. Our knowledge of their qualities and properties very seldom goes further than our senses reach and inform us. Perhaps inquisitive and observant people may penetrate further by strength of judgment. Working on probabilities drawn from careful observation and hints well put together, they may often guess right at what experience has not yet revealed to them. But this is still only guessing. It amounts only to opinion, and lacks the certainty required for knowledge. For all general knowledge lies only in our own thoughts, and consists simply in the contemplation of our own abstract ideas. Wherever we perceive any agreement or disagreement among them, there we have general knowledge. By putting the names of those ideas together accordingly in propositions, we can pronounce general truths with certainty. But the abstract ideas of substances, for which their specific names stand, have a discoverable connection or inconsistency with only a very few other ideas, whenever they have any distinct and determinate meaning. So the certainty of universal propositions about substances is very narrow and scanty in the part that is our principal inquiry concerning them. There is hardly a single name of a substance, whatever idea it is applied to, of which we can pronounce generally and with certainty that it has or lacks some other quality belonging to it. By such a quality I

mean one that constantly coexists with that idea, or is inconsistent with it, wherever it is found.

4.6.14 *What our knowledge of substances would require.*—Before we can have any tolerable knowledge of this kind, we must first know what changes the primary qualities of one body regularly produce in the primary qualities of another, and how. Second, we must know which primary qualities of any body produce certain sensations or ideas in us. This is in truth nothing less than knowing all the effects of matter under its various modifications of bulk, shape, cohesion of parts, motion, and rest. I think everyone will agree that this is utterly impossible for us to know without revelation. Suppose it were revealed to us what sort of shape, bulk, and motion of corpuscles would produce in us the sensation of a yellow color. Suppose it were also revealed what sort of shape, bulk, and texture of parts in the surface of a body were fit to give such corpuscles the right motion to produce that color. That would still not be enough to let us make universal propositions with certainty about the various sorts of bodies. For that we would also need faculties sharp enough to perceive the precise bulk, shape, texture, and motion of bodies in the minute parts by which they act on our senses, so that we could form our abstract ideas of them from those. I have mentioned only corporeal substances here, since their operations seem more within the reach of our understandings. As for the operations of spirits, both their thinking and their moving of bodies, we find ourselves at a loss at first sight. Yet perhaps we will apply our thoughts a little more closely to bodies and their operations, and examine how far our notions even of these reach with any clearness beyond sensible matter of fact. When we do, we shall have to admit that even here our discoveries amount to very little beyond complete ignorance and incapacity.

4.6.15 *As long as our ideas of substances do not contain their real constitutions, we can make only a few general certain propositions about them.*—This much is evident: the abstract complex ideas of substances, for which their general names stand, do not include their real constitutions, and so can give us very little universal

certainty. We observe certain qualities in substances and want to learn about them. But our ideas of substances are not made up of what those qualities depend on, or of anything with which those qualities have a certain connection. For example, let the idea to which we give the name "man" be, as it commonly is, a body of the ordinary shape, with sense, voluntary motion, and reason joined to it. This is the abstract idea, and consequently the essence, of our species man. Taking "man" to stand for such an idea, we can make only very few general certain propositions about man. For we do not know the real constitution on which sensation, the power of motion, and reasoning, together with that particular shape, depend, and by which they are united in the same subject. So there are very few other qualities with which we can perceive them to have a necessary connection. We therefore cannot affirm with certainty that all men sleep at intervals; that no man can be nourished by wood or stones; that all men will be poisoned by hemlock. For these ideas have no connection or incompatibility with this nominal essence of man of ours, the abstract idea that the name stands for. In these and similar cases we must appeal to trial in particular subjects, which can take us only a little way. For the rest we must content ourselves with probability. We can have no general certainty as long as our specific idea of man does not contain the real constitution that is the root in which all his inseparable qualities are united and from which they flow. The idea the word "man" stands for is only an imperfect collection of some sensible qualities and powers in him. As long as that is so, there is no discernible connection or incompatibility between our specific idea and the action of the parts of either hemlock or stones on his constitution. There are animals that eat hemlock safely, and others that are nourished by wood and stones. But as long as we lack ideas of the real constitutions of the different sorts of animals, on which these and similar qualities and powers depend, we must not hope to reach certainty in universal propositions about them. Only those few ideas that have a discernible connection with our nominal essence, or some part of it, can give us such

propositions. But these are so few, and of so little importance, that we may fairly regard our certain general knowledge of substances as almost nothing at all.

4.6.16 *Where the general certainty of propositions lies.*—To conclude: general propositions of whatever kind are capable of certainty only when their terms stand for ideas whose agreement or disagreement, as expressed there, we are able to discover. And we are certain of their truth or falsehood when we perceive the ideas the terms stand for to agree or not agree, according as they are affirmed or denied of one another. From this we may note that general certainty is never to be found except in our ideas. Whenever we go looking for it elsewhere, in experiment or observations outside us, our knowledge does not go beyond particulars. It is the contemplation of our own abstract ideas alone that can give us general knowledge.

MAXIMS

Self-evident maxims are neither the first truths known nor the foundations of other knowledge.

4.7.1 *They are self-evident.*—There is a sort of proposition that has passed for the principles of science under the name of maxims and axioms. Because these propositions are self-evident, they have been supposed innate, although nobody (that I know of) has ever set about showing the reason and foundation of their clearness or force. It may nevertheless be worthwhile to inquire into the reason for their evidence, and see whether it is peculiar to them alone. It is also worth examining how far they influence and govern the rest of our knowledge.

4.7.2 *What that self-evidence consists in.*—Knowledge, as has been shown, consists in the perception of the agreement or disagreement of ideas. Now where that agreement or disagreement is perceived immediately, by itself, without the intervention or help of any other idea, there our knowledge is self-evident. This will be clear to anyone who considers any of the propositions he assents to at first sight, without any proof. In all of them the

mind compares the ideas directly, and finds in them the agreement or disagreement that corresponds to the affirmation or denial in the proposition. He will find that this is the reason for his assent.

4.7.3 *Self-evidence is not peculiar to received axioms.*—This being so, let us next consider whether this self-evidence belongs only to the propositions that commonly go by the name of maxims and are granted the dignity of axioms. Here it is plain that several other truths, not granted the status of axioms, share this self-evidence equally with them. We shall see this if we go over the several sorts of agreement or disagreement of ideas I mentioned above, namely identity, relation, coexistence, and real existence. They will show us that not only the few propositions that have enjoyed the credit of maxims are self-evident. A great many other propositions are too, indeed an almost infinite number.

4.7.4 1. *As to identity and diversity, all propositions are equally self-evident.*—First, the immediate perception of the agreement or disagreement of identity is grounded in the mind's having distinct ideas. So it gives us as many self-evident propositions as we have distinct ideas. Everyone who has any knowledge at all has various distinct ideas as its foundation. And it is the first act of the mind to know each of its ideas by itself and distinguish it from the others. Without this act the mind could never be capable of any knowledge. Everyone finds in himself that he knows the ideas he has. He also knows when any one of them is in his understanding, and what it is. And when more than one are there, he knows them distinctly and without confusing one with another. This is always so, since it is impossible for him not to perceive what he perceives. So he can never be in doubt, when any idea is in his mind, that it is there and is the idea it is. Nor can he doubt that two distinct ideas, when they are in his mind, are there and are not one and the same idea. So all such affirmations and denials are made without any possibility of doubt, uncertainty, or hesitation. They must necessarily be assented to as soon as they are understood, that is, as soon as we have in our

minds determinate ideas for the terms in the proposition to stand for. Therefore, suppose the mind attentively considers a proposition and perceives that the two ideas signified by its terms, and affirmed or denied of each other, are the same or different. It is then immediately and infallibly certain of the truth of that proposition. This holds equally whether the terms stand for more general ideas or for less general ones. For example, the general idea of being may be affirmed of itself, as in the proposition "whatever is, is." Or a more particular idea may be affirmed of itself, as in "a man is a man," or "whatever is white is white." Or the idea of being in general may be denied of not-being, which is the only idea (if I may call it that) different from it, as in this other proposition, "it is impossible for the same thing to be and not to be." Or the idea of some particular being may be denied of another different from it, as in "a man is not a horse," "red is not blue." As soon as the terms are understood, the difference of the ideas makes the truth of the proposition immediately visible. It does so with equal certainty and ease in the less general propositions as in the more general ones, and all for the same reason. Namely, the mind perceives, in any ideas it has, that the same idea is the same as itself, and that two different ideas are different and not the same. And it is equally certain of this whether the ideas are more or less general, abstract, and comprehensive. So this sort of self-evidence does not belong by any special right to these two general propositions alone: "whatever is, is" and "it is impossible for the same thing to be and not to be." The perception of being or not being belongs no more to these vague ideas signified by the terms "whatever" and "thing" than it does to any other ideas. In short, these two general maxims amount to no more than this: that the same is the same, and the same is not different. These truths are known in more particular instances as well as in the general maxims. They are known in particular instances, too, before these general maxims are ever thought of. And they draw all their force from the mind's discernment exercised on particular ideas. Nothing is more obvious than this: the mind needs no proof, and

no reflection on either of these general propositions, to perceive clearly and know certainly that the idea of white is the idea of white and not the idea of blue. Nor does it need them to know that the idea of white, when it is in the mind, is there and is not absent. It perceives these things so clearly and knows them so certainly that considering these axioms can add nothing to the evidence or certainty of its knowledge. It is just the same with all the ideas a person has in his mind, as everyone can test in himself. He knows each to be itself and not another, and to be in his mind and not absent when it is there, with a certainty that cannot be greater. So the truth of no general proposition can be known with greater certainty, or add anything to this. Thus, with respect to identity, our intuitive knowledge extends as far as our ideas do. We can make as many self-evident propositions as we have names for distinct ideas. And I appeal to everyone's own mind: is not the proposition "a circle is a circle" as self-evident as the one made of more general terms, "whatever is, is"? And again, is not "blue is not red" a proposition that the mind can no more doubt, as soon as it understands the words, than it doubts the axiom "it is impossible for the same thing to be and not to be"? And so with all the like.

4.7.5 2. *In coexistence we have few self-evident propositions.*—Second, as to coexistence: this is a necessary connection between two ideas, such that in the subject where one of them is supposed, the other must necessarily be too. The mind has an immediate perception of agreement or disagreement of this kind in only very few cases. So in this sort we have very little intuitive knowledge. Not very many self-evident propositions are to be found here, though there are some. For example, the idea of filling a place equal to the contents of its surface is attached to our idea of body. So I think it is a self-evident proposition that two bodies cannot be in the same place.

4.7.6 3. *In other relations we may have.*—Third, as to the relation of modes: mathematicians have framed many axioms about that one relation of equality. An example is: if equals are taken from equals, the remainders will be equal. Mathematicians receive

this and the rest of that kind as maxims, and they are unquestionable truths. Yet I think anyone who considers them will find them no more clearly self-evident than these: that one and one are equal to two; that if you take two from the five fingers of one hand, and two from the five fingers of the other hand, the remaining numbers will be equal. These and a thousand other such propositions can be found in numbers. At the very first hearing they compel assent, and they carry with them as much clearness as those mathematical axioms, if not more.

4.7.7 4. *Concerning real existence we have none.*—Fourth, as to real existence: it has no connection with any of our other ideas except those of ourselves and of a first being. So concerning the real existence of all other beings we have not even demonstrative knowledge, much less self-evident knowledge. And therefore there are no maxims concerning them.

4.7.8 *These axioms do not much influence our other knowledge.*—Next, let us consider what influence these received maxims have on the other parts of our knowledge. The schools established the rule that all reasoning is *ex praecognitis et praeconcessis*, from things already known and already granted. This rule seems to lay the foundation of all other knowledge in these maxims, and to suppose them to be *praecognita*, things known beforehand. By this, I think, two things are meant. First, these axioms are the truths the mind knows first. Second, the other parts of our knowledge depend on them.

4.7.9 *Because they are not the truths we first knew.*—First, experience makes it evident that they are not the truths the mind knows first, as we have shown elsewhere (Book I, Chapter 2). Who does not see that a child certainly knows that a stranger is not its mother, and that its feeding bottle is not the rod, long before it knows that it is impossible for the same thing to be and not to be? And there are many truths about numbers that the mind is obviously perfectly acquainted with, and fully convinced of, before it ever thought of these general maxims, to which mathematicians sometimes refer them in their arguments! The reason for this is very plain. What makes the mind

assent to such propositions is nothing but its perception of the agreement or disagreement of its ideas, as it finds them affirmed or denied of one another in words it understands. Every idea is known to be what it is, and every two distinct ideas are known not to be the same. So it necessarily follows that the self-evident truths known first must be those that consist of the ideas that are first in the mind. And the ideas first in the mind are evidently those of particular things. From these the understanding proceeds by slow degrees to a few general ones. Because these are taken from the ordinary and familiar objects of sense, they are settled in the mind with general names attached to them. Thus particular ideas are received and distinguished first, and so we gain knowledge about them. Next come the less general, or specific, ideas, which are closest to particular ones. For abstract ideas are not as obvious or easy as particular ones for children, or for a mind not yet exercised. If they seem so to grown men, it is only because constant and familiar use has made them so. For when we reflect carefully on them, we shall find that general ideas are fictions and contrivances of the mind. They carry difficulty with them, and do not offer themselves as easily as we tend to imagine. For example, does it not take some effort and skill to form the general idea of a triangle, which is still not one of the most abstract, comprehensive, and difficult? For it must be neither oblique nor right-angled, neither equilateral, isosceles, nor scalene, but all and none of these at once. In effect, it is something imperfect that cannot exist: an idea in which some parts of several different and inconsistent ideas are put together. It is true that the mind, in this imperfect state, needs such ideas. It hurries toward them as fast as it can, for the convenience of communication and the enlargement of knowledge, and it is naturally very much inclined to both.[14] But still, one has reason to suspect that such ideas are marks of our imperfection. At least this is enough to show that the most abstract and general ideas are not the ones the mind is first and

14 Berkeley quotes this passage in the Introduction to his *Principles of Human Knowledge* (1710) as his chief target in attacking abstract ideas.

most easily acquainted with, and not the ones its earliest knowledge is concerned with.

4.7.10 *Because on them the other parts of our knowledge do not depend.*—Second, from what has been said it plainly follows that these much-magnified maxims are not the principles and foundations of all our other knowledge. There are a great many other truths that are as self-evident as they are, and a great many that we know before them. If so, it is impossible that they should be the principles from which we deduce all other truths. Is it impossible to know that one and two are equal to three except by virtue of this or some similar axiom, namely, the whole is equal to all its parts taken together? Many a person knows that one and two are equal to three without having heard or thought of that axiom, or of any other by which it might be proved. And he knows it as certainly as anyone else knows that the whole is equal to all its parts, or any other maxim, and all for the same reason of self-evidence. The equality of those ideas is as visible and certain to him without that axiom, or any other, as with it, because it needs no proof to be perceived. Nor, after learning that the whole is equal to all its parts, does he know that one and two are equal to three any better or more certainly than he did before. For if there is any difference between those ideas, the ideas of whole and parts are more obscure, or at least harder to settle in the mind, than those of one, two, and three. And indeed I think I may put a question to these men who insist that all knowledge, apart from those general principles themselves, depends on general, innate, and self-evident principles. What principle is needed to prove that one and one are two, that two and two are four, that three times two are six? These are known without any proof, and that shows one of two things. Either not all knowledge depends on certain *praecognita*, or general maxims called principles, or else these are principles too. And if these are to be counted principles, a great part of counting will be principles. If we add all the self-evident propositions that can be made about all our distinct ideas, principles will be almost infinite, or at least innumerable. Men come to know them at dif-

ferent ages, and a great many of these innate principles they never come to know in their whole lives. But whether they come into the mind's view earlier or later, this is true of them: they are all known by their own native evidence, and are wholly independent. They receive no light from one another, and none can be proved from another—much less the more particular from the more general, or the simpler from the more compounded. For the simpler and less abstract are the most familiar, and are grasped more easily and earlier. But whichever ideas are the clearest, the evidence and certainty of all such propositions lies in this: a man sees the same idea to be the same idea, and infallibly perceives two different ideas to be different ideas. Suppose a man has in his understanding the ideas of one and of two, the idea of yellow, and the idea of blue. He cannot help knowing for certain that the idea of one is the idea of one, and not the idea of two, and that the idea of yellow is the idea of yellow, and not the idea of blue. For a man cannot confuse the ideas he has distinct in his mind. That would be to have them confused and distinct at the same time, which is a contradiction. And to have none distinct is to have no use of our faculties and no knowledge at all. And therefore, whenever any idea is affirmed of itself, or any two entirely distinct ideas are denied of one another, the mind cannot help assenting to such a proposition as infallibly true as soon as it understands the terms. It does so without hesitation or need of proof, and without regard to the propositions made in more general terms and called maxims.

WHAT MAXIMS ARE GOOD FOR

Maxims help in teaching and in silencing wranglers, but discover nothing and can prove contradictions.

4.7.11 *What use these general maxims have.*—What, then, shall we say? Are these general maxims of no use? By no means, though perhaps their use is not what it is commonly taken to be. But some men have ascribed a great deal to these maxims, and even the slightest doubt about it is likely to be denounced as over-

turning the foundations of all the sciences. So it may be worthwhile to consider them in relation to other parts of our knowledge, and to examine more particularly what purposes they serve and what they do not.

1. It is evident from what has already been said that they are of no use to prove or confirm less general self-evident propositions.

2. It is just as plain that they are not, and never have been, the foundations on which any science has been built. There is, I know, a great deal of talk spread by the scholastics about sciences and the maxims on which they are built. But I have had the bad luck never to come across any such sciences, much less any built on these two maxims: what is, is; and it is impossible for the same thing to be and not to be. I would be glad to be shown where any such science, erected on these or any other general axioms, is to be found. I would be obliged to anyone who would lay before me the structure and system of any science built on these or any similar maxims, provided it could not be shown to stand just as firm without any consideration of them. I ask whether these general maxims do not have the same use in the study of theology, and in theological questions, as they have in other sciences. They serve here too to silence wranglers and put an end to dispute. But I think nobody will say on that account that the Christian religion is built on these maxims, or that the knowledge we have of it is derived from these principles. We have received it from revelation, and without revelation these maxims could never have helped us to it. When we find an idea by whose intervention we discover the connection of two others, this is a revelation from God to us by the voice of reason. For we then come to know a truth we did not know before. When God declares any truth to us, this is a revelation to us by the voice of his Spirit, and our knowledge is advanced. But in neither case do we receive our light or knowledge from maxims. In the one, the things themselves supply it, and we see the truth in them by perceiving their agreement or disagreement. In

the other, God himself supplies it to us immediately, and we see the truth of what he says in his unerring veracity.

3. They are of no use in helping men forward in advancing the sciences, or in new discoveries of truths still unknown. Mr. Newton, in his book that can never be admired enough, has demonstrated several propositions. They are so many new truths, previously unknown to the world, and further advances in mathematical knowledge. But in discovering them he was not helped by the general maxims "what is, is," or "the whole is bigger than a part," or the like. These were not the clues that led him to discover the truth and certainty of those propositions. Nor was it by them that he gained the knowledge of those demonstrations. It was by finding intermediate ideas that showed the agreement or disagreement of the ideas expressed in the propositions he demonstrated. This is the greatest exercise and improvement of the human understanding in enlarging knowledge and advancing the sciences, and in it the understanding gets no help at all from contemplating these or similar much-magnified maxims. Some people have such a traditional admiration for these propositions that they think no step can be taken in knowledge without the support of an axiom, and no stone laid in the building of the sciences without a general maxim. If only they would distinguish between the method of acquiring knowledge and that of communicating it—between the method of raising a science and that of teaching it to others as far as it has advanced! Then they would see that those general maxims were not the foundations on which the first discoverers raised their admirable structures, nor the keys that unlocked and opened those secrets of knowledge. Later, it is true, when schools were set up, and sciences had professors to teach what others had found out, the teachers often made use of maxims. That is, they laid down certain propositions that were self-evident, or were to be accepted as true. Once these were settled in their students' minds as unquestionable truths, the teachers used them when the occasion arose to convince the students of truths in particular instances. These were truths not as familiar

to their minds as the general axioms that had previously been drummed into them and carefully settled in their minds. Yet these particular instances, when properly reflected on, are no less self-evident to the understanding than the general maxims brought to confirm them. It was in those particular instances that the first discoverer found the truth, without the help of the general maxims. And so may anyone else who considers them with attention.

To come, then, to the use that is made of maxims:

1. They are of use, as has been observed, in the ordinary methods of teaching sciences as far as they have advanced, but of little or no use in advancing them further.

2. They are of use in disputes, for silencing obstinate wranglers and bringing those contests to some conclusion. I ask leave to inquire whether the need for them for that purpose did not arise in the following way. The schools made disputation the touchstone of men's abilities and the criterion of knowledge. They awarded victory to whoever held the field, and whoever had the last word was judged to have the better of the argument, if not of the cause. But in this way there was likely to be no decision between skillful combatants. One never failed to find a *medius terminus*, a middle term, to prove any proposition, and the other could just as constantly deny the major or the minor premise, with or without drawing a distinction. To prevent disputes from running on, as far as possible, into an endless chain of syllogisms, certain general propositions were introduced into the schools, most of them indeed self-evident. Since everyone allowed and agreed to them, they were looked on as general measures of truth. Where the disputants had not laid down any other principles between them, these served as principles beyond which there was no going, and from which neither side could retreat. And so these maxims got the name of principles, beyond which men in dispute could not retreat. By mistake they were taken to be the origins and sources from which all knowledge began, and the foundation on which the sciences were built. This was because when disputants came to any of them,

they stopped there and went no further; the matter was settled. But how much of a mistake this is has already been shown.

The schools were thought to be the fountains of knowledge, and this method of theirs, I suppose, brought a similar use of these maxims into a great part of conversation outside the schools. They were used to stop the mouths of quibblers. Anyone is excused from arguing any longer with such people when they deny these general self-evident principles, which all reasonable men accept once they have thought of them. But their use here is only to put an end to wrangling. In truth, when they are pressed in such cases, they teach nothing. That has already been done by the intermediate ideas used in the debate, whose connection can be seen without the help of those maxims. So the truth is known before the maxim is produced and the argument is brought back to a first principle. Men would give up a wrong argument before it came to that if in their disputes they aimed at finding and embracing the truth, and not at a contest for victory. And so maxims have their use in putting a stop to the perverseness of those whose candor should have made them yield sooner. But the method of the schools has allowed and encouraged men to oppose and resist evident truth until they are baffled, that is, until they are driven to contradict themselves or some established principle. So it is no wonder that in ordinary conversation they are not ashamed of what the schools count a virtue and a glory: obstinately maintaining the side of the question they have chosen, whether true or false, to the last extremity, even after they have been refuted. It is a strange way to reach truth and knowledge. I think the rational part of mankind, not corrupted by education, could hardly believe that it would ever be admitted among the lovers of truth and the students of religion or nature. Nor could they believe it would be introduced into the seminaries of those who are to spread the truths of religion or philosophy among the ignorant and unconvinced. How far such a way of learning is likely to turn young men's minds away from the sincere search for truth and love of it—indeed, to make them doubt whether there is any such thing,

or at least whether it is worth holding on to—I will not inquire now. This much I think: apart from those places that brought the Peripatetic philosophy into their schools, where it continued for many ages without teaching the world anything but the art of wrangling, these maxims were nowhere thought to be the foundations on which the sciences were built, or great aids to the advancement of knowledge.

As for these general maxims, then, they are, as I have said, of great use in disputes, to stop the mouths of wranglers. But they are not of much use in discovering unknown truths, or in helping the mind forward in its search for knowledge. For who ever began to build his knowledge on the general proposition "what is, is," or "it is impossible for the same thing to be and not to be," and deduced a system of useful knowledge from either of these, as from a principle of science? Wrong opinions often involve contradictions, and so one of these maxims can serve well as a touchstone to show where they lead. But however fit they are to lay bare the absurdity or mistake in a man's reasoning or opinion, they are of very little use for enlightening the understanding. It will not be found that the mind gets much help from them in its progress in knowledge. That knowledge would be neither less, nor less certain, if these two general propositions had never been thought of. It is true, as I have said, that in argument they sometimes serve to stop a wrangler's mouth. They show the absurdity of what he says, and expose him to the shame of contradicting what all the world knows, and what he himself cannot help admitting to be true. But it is one thing to show a man that he is in error, and another to put him in possession of truth. I would very much like to know what truths these two propositions can teach us, and by their influence make us know, that we did not know before or could not know without them. Let us reason from them as well as we can: they concern only identical predications, and they influence nothing else, if they influence anything at all. Each particular proposition about identity or diversity is known in itself, if attended to, as clearly and certainly as either of these general ones. It is only that these gen-

eral ones, because they serve in all cases, are for that reason drummed in and insisted on more. As for other, less general maxims, many of them are nothing but merely verbal propositions, and teach us nothing but the relation and meaning of names to one another. "The whole is equal to all its parts": what real truth, I ask you, does it teach us? What more is contained in that maxim than what the meaning of the word *totum*, or "the whole," implies by itself? He who knows that the word "whole" stands for what is made up of all its parts already knows little less than that the whole is equal to all its parts. And on the same ground, I think, the proposition "a hill is higher than a valley," and several like it, might also pass for maxims. Still, masters of mathematics, when as teachers of what they know they want to initiate others into that science, have good reason to place this and some other such maxims at the entrance to their systems. In this way their students, having thoroughly acquainted their thoughts at the beginning with these propositions made in such general terms, may become used to making such reflections. They will then have these more general propositions ready, as established rules and sayings, to apply to all particular cases. This is not because, weighed fairly, they are clearer and more evident than the particular instances they are brought to confirm. It is because, being more familiar to the mind, the mere naming of them is enough to satisfy the understanding. But this, I say, comes more from our habit of using them, and the settled place they have gained in our minds by our often thinking of them, than from any difference in the evidence of the things. But before habit has settled methods of thinking and reasoning in our minds, I am inclined to think it is quite otherwise. When part of a child's apple is taken away, he knows it better in that particular instance than by the general proposition "the whole is equal to all its parts." And if one of these needs to be confirmed to him by the other, the general has more need to be let into his mind by the particular than the particular by the general. For our knowledge begins in particulars, and so spreads by degrees to generals. Afterward, though, the mind takes the quite

opposite course. Having drawn its knowledge into propositions as general as it can, it makes those familiar to its thoughts, and gets used to turning to them as the standards of truth and falsehood. Through this familiar use of them as rules for measuring the truth of other propositions, it comes in time to be thought that more particular propositions get their truth and evidence from their conformity to these more general ones, which are so frequently pressed and so constantly accepted in discussion and argument. And this, I think, is the reason why, among so many self-evident propositions, only the most general have been given the title of maxims.

4.7.12 *Maxims, if care be not taken in the use of words, may prove contradictions.*—There is one more thing about these general maxims that I think it may not be amiss to point out. Far from improving our minds or establishing them in true knowledge, these general maxims, if our notions are wrong, loose, and unsteady, and we surrender our thoughts to the sounds of words instead of fixing them on settled, determinate ideas of things, will serve to confirm us in our mistakes. And with that way of using words, which is the most common, they will serve to prove contradictions. For example: suppose someone, following Descartes, forms in his mind an idea of what he calls body as nothing but extension. He can easily demonstrate by the maxim "what is, is" that there is no vacuum, that is, no space empty of body. For since the idea to which he attaches the name "body" is bare extension, his knowledge that space cannot exist without body is certain. He knows his own idea of extension clearly and distinctly, and knows that it is what it is and not another idea, even though it is called by these three names: extension, body, space. These three words stand for one and the same idea. So no doubt they can be affirmed of one another with the same evidence and certainty as each can be affirmed of itself. And it is just as certain that, as long as I use them all to stand for one and the same idea, the predication "space is body" is as true and as identical in its meaning as the predication "body is body" is true and identical in both meaning and sound.

4.7.13 *Instance in vacuum.*—But suppose someone else comes along and makes himself another idea of the thing, different from Descartes's, though like Descartes he calls it by the same name, body. Suppose he makes the idea he expresses by the word "body" the idea of a thing that has both extension and solidity together. He will demonstrate just as easily that there can be a vacuum, or space without body, as Descartes demonstrated the contrary. For the idea to which he gives the name "space" is merely the simple idea of extension, and the idea to which he gives the name "body" is the complex idea of extension and resistance, or solidity, together in the same subject. So these two ideas are not exactly one and the same. In the understanding they are as distinct as the ideas of one and two, of white and black, or of corporeity and humanity, if I may use such barbarous terms. Therefore the predication of one of the other, in our minds or in the words standing for them, is not identical. Rather, the denial of one of the other, namely, the proposition "extension, or space, is not body," is as true and as evidently certain as the maxim "it is impossible for the same thing to be and not to be" can make any proposition.

4.7.14 *They prove not the existence of things without us.*—So, as you see, both of these propositions—that there can be a vacuum, and that there cannot be a vacuum—can be equally demonstrated by these two certain principles, namely, "what is, is" and "the same thing cannot be and not be." Yet neither of these principles will serve to prove to us that any bodies exist, or which ones do. For that we are left to our senses, to discover it to us as far as they can. Those universal and self-evident principles are only our constant, clear, and distinct knowledge of our own ideas in their more general or comprehensive form. So they can assure us of nothing that happens outside the mind. Their certainty is founded only on the knowledge we have of each idea by itself, and of its distinction from others. About this we cannot be mistaken while the ideas are in our minds. But we can be, and often are, mistaken when we keep the names without the ideas, or use them confusedly, sometimes for one idea and sometimes for

another. In such cases the force of these axioms reaches only to the sound of the words and not their meaning, and so serves only to lead us into confusion, mistake, and error. I have made this remark to show men that these maxims, however much they are praised as the great guardians of truth, will not protect them from error if they use their words carelessly and loosely. In all I have suggested here about their small use for the improvement of knowledge, or their dangerous use with undetermined ideas, I have been far from saying or intending that they should be set aside, as some have been too quick to charge me. I affirm that they are truths, self-evident truths, and so they cannot be set aside. As far as their influence reaches, it is useless to try to curtail it, and I will not attempt to. But still, without doing any injury to truth or knowledge, I may have reason to think that their use does not match the great weight that seems to be laid on them. And I may warn men not to misuse them by confirming themselves in their errors.

4.7.15 *Their application dangerous about complex ideas.*—But whatever use they may have in verbal propositions, they cannot discover or prove to us the least knowledge of the nature of substances as they are found and exist outside us, except so far as it is grounded on experience. The consequences of these two propositions called principles are very clear, and their use is not dangerous or harmful, in proving things that do not need them at all for proof, because they are clear by themselves without them, namely, where our ideas are determined and are known by the names that stand for them. But when these principles, namely, "what is, is" and "it is impossible for the same thing to be and not to be," are used to prove propositions containing words that stand for complex ideas—for example, man, horse, gold, virtue—then they are infinitely dangerous. Most commonly they make men receive and hold on to falsehood as manifest truth, and uncertainty as demonstration. From this follow error, obstinacy, and all the harm that can come from wrong reasoning. The reason is not that these principles are less true, or have less force, in proving propositions made of terms stand-

ing for complex ideas than in propositions about simple ideas. It is that men generally make a mistake. They think that where the same terms are kept, the propositions are about the same things, even though the ideas the terms stand for are in fact different. So these maxims are used to support propositions that are contradictory in sound and appearance, as is clear from the demonstrations about a vacuum mentioned above. So as long as men take words for things, as they usually do, these maxims can serve, and commonly do serve, to prove contradictory propositions, as will be made still clearer.

4.7.16 *Instance in man.*—For instance, let man be the thing about which you want to demonstrate something by these first principles. We shall see that so far as demonstration rests on these principles, it is only verbal. It gives us no certain, universal, true proposition, and no knowledge of any being existing outside us. First, when a child has formed the idea of a man, his idea is probably just like the picture a painter makes of the visible appearances joined together. Such a combination of ideas together in his understanding makes up the single complex idea he calls man. Since white or flesh color is, in England, one of these ideas, the child can demonstrate to you that a Black person is not a man, because white color was one of the constant simple ideas in the complex idea he calls man. And so he can demonstrate, by the principle that it is impossible for the same thing to be and not to be, that a Black person is not a man. The foundation of his certainty is not that universal proposition, which perhaps he never heard or thought of. It is the clear, distinct perception he has of his own simple ideas of black and white, which he can never be persuaded to take, or ever mistake, one for the other, whether or not he knows that maxim. And to this child, or to anyone who has such an idea and calls it man, you can never demonstrate that a man has a soul, because his idea of man includes no such notion or idea. So for him the principle "what is, is" does not prove this matter. It depends on the collection and observation by which he is to make his complex idea called man.

4.7.17 Second, someone else who has gone further in forming and collecting the idea he calls man, and adds laughter and rational speech to the outward shape, can demonstrate by the maxim "it is impossible for the same thing to be and not to be" that infants and severely intellectually disabled children are not men. And I have talked with very rational men who have actually denied that they are men.

4.7.18 Third, perhaps another makes up the complex idea he calls man only out of the ideas of body in general and the powers of language and reason, and leaves out shape entirely. This man can demonstrate that a man may have no hands but be four-footed, since neither of these is included in his idea of man. And in whatever body or shape he found speech and reason joined, that was a man. For since he has clear knowledge of such a complex idea, it is certain that what is, is.

4.7.19 *Little use of these maxims in proofs where we have clear and distinct ideas.*—So, if we consider it rightly, I think we may say this. Where our ideas are determined in our minds, and we have attached to them known and steady names under those settled determinations, there is little need for these maxims, or none at all, to prove the agreement or disagreement of any of them. Whoever cannot discern the truth or falsehood of such propositions without the help of these and similar maxims will not be helped by these maxims to do it. For if he cannot know the truth of other propositions without proof, though they are as self-evident as these, he cannot be supposed to know the truth of these maxims themselves without proof. It is on this ground that intuitive knowledge neither requires nor admits any proof, one part of it any more than another. Whoever supposes that it does takes away the foundation of all knowledge and certainty. Whoever needs a proof to make him certain of, and assent to, the proposition that two are equal to two will also need a proof to make him admit that what is, is. Whoever needs a proof to convince him that two are not three, that white is not black, that a triangle is not a circle, and so on, or that any other two determined distinct ideas are not one and the same, will also need a

demonstration to convince him that it is impossible for the same thing to be and not to be.

4.7.20 *Their use dangerous where our ideas are confused.*—These maxims are of little use where we have determined ideas. And, as I have shown, their use is dangerous where our ideas are not determined, and where we use words that are not attached to determined ideas but have a loose and wandering meaning, standing sometimes for one idea and sometimes for another. From this follow mistake and error, and these maxims, brought in as proofs to establish propositions whose terms stand for undetermined ideas, confirm and rivet those errors by their authority.

TRIFLING PROPOSITIONS

Identical propositions, and those predicating part of a definition, are certain but teach nothing.

4.8.1 *Some propositions bring no increase to our knowledge.*—Whether the maxims discussed in the previous chapter are as useful to real knowledge as is generally supposed, I leave others to consider. But this, I think, can be confidently affirmed: there are universal propositions which, though they are certainly true, add no light to our understandings and bring no increase to our knowledge. Such are:

4.8.2 *As, first, identical propositions.*—First, all purely identical propositions. These plainly, and at first glance, appear to contain no instruction. When we affirm a term of itself, whether the term is merely verbal or contains some clear and real idea, it shows us nothing we must not certainly have known already. This holds whether we make such a proposition ourselves or have it put to us. Admittedly, that most general one, "what is, is," may sometimes serve to show a man the absurdity he is guilty of when, through roundabout phrasing or equivocal terms, he would in particular cases deny a thing of itself. For nobody will so openly defy common sense as to affirm visible and direct contradictions in plain words. Or if he does, one is excused for

breaking off any further conversation with him. Still, I think I may say that neither that accepted maxim nor any other identical proposition teaches us anything. This great and much-praised maxim, boasted of as the foundation of demonstration, may be used to confirm such propositions, and often is. Yet all it proves amounts to no more than this: that the same word may with great certainty be affirmed of itself, with no doubt about the truth of any such proposition. And, let me add, without any real knowledge.

4.8.3 For at this rate any very ignorant person who can merely make a proposition, and knows what he means when he says yes or no, may make a million propositions of whose truth he may be infallibly certain. Yet he will not know a single thing in the world by them. For example: what is a soul, is a soul; or, a soul is a soul; a spirit is a spirit; a fetish is a fetish; and so on. These are all equivalent to the proposition "what is, is," that is, what has existence has existence; or, whoever has a soul has a soul. What is this but trifling with words?[15] It is just like a monkey shifting his oyster from one hand to the other. Had he only had words, he could no doubt have said, "Oyster in right hand is subject, and oyster in left hand is predicate." He would so have made a self-evident proposition about oyster, namely, oyster is oyster, and yet for all that not have been one bit wiser or more knowledgeable. That way of handling the matter would satisfy the monkey's hunger about as well as it would a man's understanding. The one would have grown in knowledge exactly as much as the other grew in bulk.

I know there are some who, because identical propositions are self-evident, show great concern for them. They think they do philosophy a great service by praising them up, as if all knowledge were contained in them and the understanding were led into all truth by them alone. I grant as readily as anyone that they are all true and self-evident. I grant further that the founda-

15 Locke's "fetiche" (from Portuguese *feitiço*) was the travelers' word for an object venerated in West Africa. Here it serves as an example of a word one can use without knowing what it stands for.

tion of all our knowledge lies in the faculty we have of perceiving the same idea to be the same and of distinguishing it from those that are different, as I showed in the previous chapter. But how that clears the use of identical propositions for improving knowledge of the charge of trifling, I do not see. Let anyone repeat as often as he likes that the will is the will, or lay whatever stress on it he sees fit. What use is this, or an infinite number of similar propositions, for enlarging our knowledge? Let a man pile up as many such propositions as his supply of words will allow: a law is a law, and obligation is obligation; right is right, and wrong is wrong. Will these and the like ever help him to an acquaintance with ethics, or instruct him or others in the knowledge of morality? Those who do not know what is right and what is wrong, or the standards by which they are measured, and perhaps never will, can make these and all such propositions with as much assurance, and know their truth as infallibly, as the person best instructed in morality. But what progress do such propositions give them in the knowledge of anything necessary or useful for their conduct?

Suppose someone set out to enlighten the understanding in some branch of knowledge by busying himself with identical propositions and insisting on maxims like these: substance is substance, and body is body; a vacuum is a vacuum, and a vortex is a vortex; a centaur is a centaur, and a chimera is a chimera, and so on. He would be thought to be doing little better than trifling. For these, and all such, are equally true, equally certain, and equally self-evident. Yet they cannot help being counted trifling when they are used as principles of instruction and stress is laid on them as aids to knowledge. For they teach nothing but what everyone capable of discourse knows without being told, namely,[16] that the same term is the same term, and the same idea the same idea. This is why I thought before, and still think, that offering such propositions and drumming them in, in order to give the understanding any new light or way into the knowledge of things, is no better than trifling.

16 "Vortex" alludes to the whirlpools of subtle matter in Descartes' physics.

Instruction lies in something very different. Anyone who wants to enlarge his own mind, or another's, toward truth he does not yet know must find intermediate ideas. He must then lay them side by side in such an order that the understanding can see the agreement or disagreement of the ideas in question. Propositions that do this are instructive. But they are far from those that affirm the same term of itself, which in no way advances oneself or anyone else in any sort of knowledge. That helps toward knowledge no more than it would help someone learning to read to have propositions like these drummed into him: An A is an A, and a B is a B. A man may know this as well as any schoolmaster and still never be able to read a word as long as he lives. Nor do these, or any such identical propositions, bring him one jot further forward in the skill of reading, whatever use he makes of them.

Some find fault with my calling them trifling propositions. If they had only read, and taken the trouble to understand, what I wrote above in very plain English, they could not have failed to see what I mean by identical propositions. I mean only those in which the same term, carrying the same idea, is affirmed of itself, and I take that to be the proper meaning of "identical propositions." About all such, I think I may safely go on saying that to put them forward as instructive is no better than trifling. For no one who has the use of reason can miss them where they need to be noticed, or doubt their truth once he does notice them.

But if people choose to call propositions identical in which the same term is not affirmed of itself, others must judge whether they speak more properly than I do. This much is certain: all they say about propositions that are not identical in my sense has nothing to do with me or with what I have said. Everything I have said concerns propositions in which the same term is affirmed of itself. And I would very much like to see an example in which any such proposition can be used to the benefit and improvement of anyone's knowledge. Examples of other

kinds, whatever use may be made of them, do not concern me, since they are not what I call identical.

4.8.4 *Secondly, when a part of any complex idea is predicated of the whole.*—A second sort of trifling proposition is one in which a part of the complex idea is predicated of the name of the whole, that is, a part of the definition of the word defined. Such are all propositions in which the genus is predicated of the species, or more comprehensive terms of less comprehensive ones. Take the proposition "lead is a metal." What information, what knowledge, does it carry to a man who knows the complex idea the name "lead" stands for? All the simple ideas that go into the complex one signified by the term "metal" are nothing but what he already included in, and signified by, the name "lead." True, a man may know the meaning of the word "metal" but not of the word "lead." For him it is quicker to explain the meaning of "lead" by saying it is a metal, which expresses several of its simple ideas at once, than to list them one by one, telling him it is a very heavy body, fusible and malleable.

4.8.5 *As part of the definition of the term defined.*—It is just as trifling to predicate any other part of the definition of the term defined, or to affirm any one of the simple ideas of a complex idea of the name of the whole complex idea, as in "all gold is fusible." Fusibility is one of the simple ideas that go to make up the complex one that the sound "gold" stands for. So what can it be but playing with sounds to affirm of the name "gold" what is included in its accepted meaning? It would be thought little short of ridiculous to affirm solemnly, as an important truth, that gold is yellow. And I do not see how it is one jot more significant to say it is fusible, unless that quality is left out of the complex idea of which the sound "gold" is the mark in ordinary speech. What instruction can there be in telling someone what he has already been told, or is supposed to know already? For I am supposed to know the meaning of the word another person uses to me, or else he must tell me. Suppose I know that the name "gold" stands for this complex idea: body, yellow, heavy, fusible, malleable. Then it will not teach me much to put it sol-

emnly into a proposition afterward and gravely say, "all gold is fusible." Such propositions can serve only one purpose. When someone departs from the definition of his own terms, they can expose his bad faith by reminding him of it now and then. But however certain they are, they carry no knowledge with them except of the meaning of words.

4.8.6 *Instance, man and palfrey.*—"Every man is an animal, or living body" is as certain a proposition as can be. But it does no more toward the knowledge of things than saying "a palfrey is an ambling horse," or "a neighing, ambling animal." Both are only about the meaning of words. The first lets me know only this: body, sense, and motion (or the power of sensation and of moving) are three of the ideas I always include in and signify by the word "man," and where they are not found together, the name "man" does not belong to that thing. The second likewise lets me know only this: body, sense, a certain gait, and a certain kind of voice are some of the ideas I always include in and signify by the word "palfrey," and where they are not found together, the name "palfrey" does not belong to that thing.[17] It is just the same, and comes to the same thing, when we take any term standing for one or more of the simple ideas that together make up the complex idea called "man" and affirm it of the term "man." Suppose a Roman signified by the word *homo* all these distinct ideas united in one subject: "*corporietas, sensibilitas, potentia se movendi, rationalitas, visibilitas*." He could no doubt, with great certainty, universally affirm one, several, or all of them together of the word *homo*. But he would be doing no more than saying that the word *homo*, in his country, included all these ideas in its meaning.[18] He would be much like a knight in a romance who by the word "palfrey" signified these ideas: a body of a certain shape, four-legged, with sense and motion, ambling, neighing, white, and accustomed to carrying a woman on its

17 A palfrey was a light saddle horse with a smooth ambling gait, the typical mount of ladies in medieval romance.

18 Latin: corporeality, sentience, the power of moving oneself, rationality, visibility.

back. The knight could with the same certainty universally affirm any or all of these of the word "palfrey." But he would teach no more by it than this: that the word "palfrey," in his language or the language of romance, stood for all these, and was not to be applied to anything that lacked any of them. Now suppose someone tells me that in whatever thing sense, motion, reason, and laughter are united, that thing actually has a notion of God, or would be put to sleep by opium. He does make an instructive proposition. For neither having the notion of God nor being put to sleep by opium is contained in the idea signified by the word "man." So such propositions teach us something more than merely what the word "man" stands for, and the knowledge contained in them is more than verbal.

4.8.7 *For this teaches but the signification of words.*—Before a man makes any proposition, he is supposed to understand the terms he uses in it. Otherwise he talks like a parrot, only making a noise by imitation and forming certain sounds he has learned from others. He is not then speaking as a rational creature, using them as signs of ideas he has in his mind. The hearer, too, is supposed to understand the terms as the speaker uses them; otherwise the speaker talks jargon and makes an unintelligible noise. So a man trifles with words when he makes a proposition that, once made, contains no more than one of its terms does, and that one was supposed to know already, for example, "a triangle has three sides," or "saffron is yellow." This is tolerable only where a man sets out to explain his terms to someone who is supposed not to understand him, or says he does not. Even then it teaches only the meaning of that word and the use of that sign.

4.8.8 *But no real knowledge.*—We can, then, know the truth of two sorts of propositions with perfect certainty. The first sort consists of those trifling propositions that have a certainty in them. But it is only a verbal certainty, not an instructive one. Second, we can know the truth of certain propositions, and so be certain of them: those that affirm something of another thing which is a necessary consequence of its precise complex idea but is not

contained in it. An example is that the external angle of every triangle is greater than either of the opposite internal angles. This relation of the external angle to either of the opposite internal angles forms no part of the complex idea signified by the name "triangle." So this is a real truth, and it carries instructive real knowledge with it.

4.8.9 *General propositions concerning substances are often trifling.*— We have little or no knowledge of what combinations of simple ideas exist together in substances except through our senses. So we cannot make any universal certain propositions about them beyond what our nominal essences lead us to. These lead to only a very few and insignificant truths compared with those that depend on the real constitutions of substances. So the general propositions made about substances, if they are certain, are for the most part merely trifling. If they are instructive, they are uncertain: we can have no knowledge of their real truth, however much constant observation and analogy may help our judgment in guessing. This is how it happens that one often meets with very clear and coherent discourses that nevertheless amount to nothing. Names of substances, like other names, have relative meanings fixed to them. To that extent they may with perfect truth be joined negatively and affirmatively in propositions, as their relative definitions make them fit to be joined. And propositions made up of such terms may be deduced from one another just as clearly as those that convey the most real truths. All this without any knowledge of the nature or reality of things existing outside us. By this method one may make demonstrations and indubitable propositions in words, and yet not advance one jot in the knowledge of the truth of things. Take someone who has learned the following words, with their ordinary mutually relative meanings attached to them: substance, man, animal, form, soul, vegetative, sensitive, rational. He may make several indubitable propositions about the soul without knowing at all what the soul really is. And a man may find an infinite number of propositions, arguments, and conclusions of this sort in books of metaphysics, scholastic theology, and some

kinds of natural philosophy. Yet after all he will know as little of God, spirits, or bodies as he did before he started.

4.8.10 *And why.*—Someone who has freedom to define, that is, to fix the meaning of his names of substances, may with little trouble demonstrate them of one another. (Everyone certainly does this in effect when he makes them stand for his own ideas.) Suppose he fixes their meanings at random, taking them from his own fancies or other people's and not from any examination of or inquiry into the nature of things themselves. He can then demonstrate them of one another according to the various respects and mutual relations he has given them to each other. In doing so he need attend to nothing but his own notions and the names he has given them, however things agree or disagree in their own nature. But by this he no more increases his knowledge than a man increases his wealth by taking a bag of counters and calling one in a certain place a pound, another in another place a shilling, and a third in a third place a penny. Proceeding this way, he may no doubt reckon correctly and add up a great sum, according to how his counters are placed and made to stand for more or less as he pleases. Yet he will not be one jot richer. He will not even know how much a pound, a shilling, or a penny is, but only that one is contained in the other twenty times and contains the other twelve times. A man may do the same with the meanings of words, by making them more, less, or equally comprehensive in relation to one another.[19]

4.8.11 *Thirdly, using words variously is trifling with them.*—Yet with most words used in discourses, argumentative and controversial ones alike, there is something further to complain of. It is the worst sort of trifling, and it puts us still further from the certainty of knowledge we hope to reach through them or find in them. Namely, that most writers, far from instructing us in the nature and knowledge of things, use their words loosely and inconsistently. They do not use them constantly and steadily in the same meanings, and so they fail to make plain and clear deductions of words from one another and to make their dis-

19 In the old English currency a pound was 20 shillings and a shilling 12 pence.

courses coherent and clear (however little instructive those discourses might be). This would not be hard to do, if they did not find it convenient to shelter their ignorance or obstinacy behind the obscurity and intricacy of their terms. In many people, perhaps, carelessness and bad habit contribute a good deal to this.

4.8.12 *Marks of verbal propositions.*—To conclude: merely verbal propositions can be recognized by the following marks.

1. *Predication in abstract.*—First, all propositions in which two abstract terms are affirmed of each other are merely about the meaning of sounds. For no abstract idea can be the same as any other but itself. So when its abstract name is affirmed of any other term, this can signify no more than that it may or ought to be called by that name, or that the two names signify the same idea. Suppose, then, that someone says that parsimony is frugality, that gratitude is justice, or that this or that action is or is not temperate. However plausible these and similar propositions may seem at first sight, when we press them and examine closely what they contain, we will find that it all amounts to nothing but the meaning of those terms.

4.8.13 2. *A part of the definition predicated of any term.*—Second, all propositions in which a part of the complex idea a term stands for is predicated of that term are only verbal, for example, to say that gold is a metal, or heavy. And so all propositions in which more comprehensive words, called genera, are affirmed of subordinate or less comprehensive ones, called species, or of individuals, are merely verbal.

Let us examine by these two rules the propositions that make up the discourse we ordinarily meet with, both in books and out of them. We may then find that a greater part of them than is usually suspected are purely about the meaning of words, and contain nothing but the use and application of these signs.

This, I think, I may lay down as an infallible rule. Wherever the distinct idea a word stands for is not known and considered, and something not contained in that idea is not affirmed or denied of it, our thoughts are stuck entirely in sounds and can reach no real truth or falsehood. If this is well heeded, it might

save us a great deal of useless distraction and dispute, and greatly shorten our trouble and wandering in the search for real and true knowledge.

KNOWLEDGE OF OUR OWN EXISTENCE

We know our own existence by intuition; every thought and even every doubt makes it certain.

4.9.1 *General certain propositions concern not existence.*—So far we have considered only the essences of things. These are only abstract ideas, and so they are removed in our thoughts from particular existence. (For the proper operation of the mind in abstraction is to consider an idea as having no other existence than what it has in the understanding.) They therefore give us no knowledge of real existence at all. We may note in passing that universal propositions whose truth or falsehood we can know with certainty do not concern existence. We may note further that all particular affirmations or denials that would not be certain if made general concern existence only. For they declare only the accidental union or separation of ideas in existing things, ideas which in their abstract natures have no known necessary union or incompatibility.

4.9.2 *A threefold knowledge of existence.*—But let us leave the nature of propositions and the different ways of predication to be considered more fully elsewhere. Let us now go on to inquire into our knowledge of the existence of things, and how we come by it. I say, then, that we have knowledge of our own existence by intuition, of the existence of God by demonstration, and of other things by sensation.

4.9.3 *Our knowledge of our own existence is intuitive.*—As for our own existence, we perceive it so plainly and so certainly that it neither needs nor admits of any proof. For nothing can be more evident to us than our own existence. I think, I reason, I feel pleasure and pain: can any of these be more evident to me than my own existence? If I doubt all other things, that very doubt makes me perceive my own existence, and will not let me doubt

that. For if I know I feel pain, it is evident that I have as certain a perception of my own existence as of the existence of the pain I feel. Or if I know I doubt, I have as certain a perception of the existence of the thing doubting as of the thought I call doubt. Experience, then, convinces us that we have an intuitive knowledge of our own existence, and an inner, infallible perception that we are. In every act of sensation, reasoning, or thinking we are conscious to ourselves of our own being, and in this matter we fall nothing short of the highest degree of certainty.

KNOWLEDGE OF GOD

From our own existence Locke argues that an eternal, most powerful, and most knowing being exists.

4.10.1 *We are capable of knowing certainly that there is a God.*—God has given us no innate ideas of himself; he has stamped no original characters on our minds in which we might read his being. Yet in furnishing us with the faculties our minds are endowed with, he has not left himself without witness. For we have sense, perception, and reason, and cannot lack a clear proof of him as long as we carry ourselves about with us. Nor can we justly complain of our ignorance on this great point. He has provided us so plentifully with the means to discover and know him, as far as is necessary for the purpose of our being and the great concern of our happiness.[20] This is the most obvious truth reason discovers, and its evidence is (if I am not mistaken) equal to mathematical certainty. Yet it still requires thought and attention. The mind must apply itself to deducing it in a regular way from some part of our intuitive knowledge. Otherwise we will be as uncertain and ignorant of this as of other propositions that are in themselves capable of clear demonstration. I want to show, then, that we are capable of knowing, that is, being certain, that there is a God, and how we may arrive at this certainty. For this I think we need go no further than ourselves and the undoubted knowledge we have of our own existence.

20 "He has not left himself without witness" echoes Acts 14:17.

4.10.2 *Man knows that he himself is.*—I think it beyond question that man has a clear idea of his own being: he knows certainly that he exists, and that he is something. Anyone who can doubt whether he is anything or not, I do not address, any more than I would argue with pure nothing or try to convince nonentity that it was something. Someone may claim to be so skeptical as to deny his own existence (for really to doubt it is plainly impossible). As far as I am concerned, let him enjoy his beloved happiness of being nothing, until hunger or some other pain convinces him otherwise. This, then, I think I may take as a truth that everyone's certain knowledge assures him of, beyond any freedom to doubt: namely, that he is something that actually exists.

4.10.3 *He knows also that nothing cannot produce a being, therefore something eternal.*—Next, man knows with intuitive certainty that bare nothing can no more produce any real being than it can be equal to two right angles. If a man does not know that nonentity, or the absence of all being, cannot be equal to two right angles, he cannot possibly know any demonstration in Euclid. So if we know that there is some real being, and that nonentity cannot produce any real being, we have an evident demonstration that something has existed from eternity. For what did not exist from eternity had a beginning, and what had a beginning must have been produced by something else.

4.10.4 *That eternal being must be most powerful.*—Next, it is evident that what had its being and beginning from another must also have from another everything that is in it and belongs to its being. All the powers it has must be owed to, and received from, the same source. This eternal source of all being, then, must also be the source and origin of all power. And so this eternal being must also be the most powerful.

4.10.5 *And most knowing.*—Again, a man finds in himself perception and knowledge. We have now gone one step further. We are certain that there is not only some being but some knowing, intelligent being in the world.

Either, then, there was a time when there was no knowing being, and knowledge began to exist, or else there has also been a knowing being from eternity. Suppose it is said that there was a time when no being had any knowledge, when that eternal being was void of all understanding. I reply that in that case there could never have been any knowledge. For things wholly void of knowledge, operating blindly and without any perception, can no more produce a knowing being than a triangle can make its three angles greater than two right angles. It is as contrary to the idea of senseless matter that it should put sense, perception, and knowledge into itself, as it is contrary to the idea of a triangle that it should put into itself angles greater than two right angles.

4.10.6 *And therefore God.*—Thus, from considering ourselves and what we infallibly find in our own constitution, our reason leads us to the knowledge of this certain and evident truth: there is an eternal, most powerful, and most knowing being. Whether anyone chooses to call it God does not matter. The thing is evident. And from this idea, duly considered, all the other attributes we ought to ascribe to this eternal being will easily be deduced. Someone might nevertheless be so senselessly arrogant as to suppose that man alone is knowing and wise, and yet is the product of mere ignorance and chance, and that all the rest of the universe acts only by that blind haphazard. I will leave him to consider at his leisure that very rational and forceful rebuke of Cicero (*De Legibus*, book 2): "What can be more foolishly arrogant and unbecoming than for a man to think that he has a mind and understanding in him, but that in all the rest of the universe there is no such thing?[21] Or that those things which he can scarcely comprehend with the utmost stretch of his reason should be moved and managed without any reason at all?" "Quid est enim verius, quam neminem esse oportere tam stulte arrogantem, ut in se mentem et rationem putet inesse, in cœlo mundoque non putet? Aut ea quæ vix summa ingenii ratione comprehendat, nulla ratione moveri putet?"

21 Cicero, *On the Laws* 2.7.16.

From what has been said, it is plain to me that we have a more certain knowledge of the existence of a God than of anything our senses have not immediately revealed to us. Indeed, I think I may say that we know more certainly that there is a God than that there is anything else outside us. When I say we know, I mean that such knowledge is within our reach. We cannot miss it if we will only apply our minds to it as we do to various other inquiries.

4.10.7 *Our idea of a most perfect being not the sole proof of a God.*— How far the idea of a most perfect being, which a man may frame in his mind, does or does not prove the existence of a God, I will not examine here. Men differ in temperament and in the way they apply their thoughts, and so some arguments carry more weight with one person, and some with another, in confirming the same truth.[22] Still, I think I may say this: it is a poor way of establishing this truth and silencing atheists to rest the whole weight of so important a point on that one foundation. It is a poor way to take some men's having that idea of God in their minds as the only proof of a deity. (For it is evident that some men have none, some worse than none, and most very different ones.) And it is a poor way, out of excessive fondness for that pet invention, to throw out, or at least try to discredit, all other arguments. Such people would forbid us to listen, as though they were weak or fallacious, to the proofs that our own existence and the perceptible parts of the universe present to our thoughts. Yet those proofs are so clear and forceful that I consider it impossible for a thoughtful man to resist them. For I judge it as certain and clear a truth as can be stated anywhere that "the invisible things of God are clearly seen from the creation of the world, being understood by the things that are made, even his eternal power and Godhead."[23] Our own being furnishes us, as I have shown, with an evident and incontestable proof of a deity. I believe nobody can escape its force who will

22 Locke means the argument from the idea of a perfect being, associated with Anselm and Descartes.

23 Romans 1:20.

only attend to it as carefully as to any other demonstration with so many parts. Yet this is so fundamental a truth, and of such consequence, that all religion and genuine morality depend on it. So I have no doubt my reader will forgive me if I go over some parts of this argument again and enlarge on them a little more.

4.10.8 *Something from eternity.*—No truth is more evident than that something must have existed from eternity. I have never yet heard of anyone so unreasonable as to suppose a time when there was absolutely nothing, or able to suppose so manifest a contradiction. For of all absurdities the greatest is to imagine that pure nothing, the complete negation and absence of all beings, should ever produce any real existence.

Since, then, no rational creature can avoid concluding that something has existed from eternity, let us next see what kind of thing that must be.

MATTER CANNOT BE THE FIRST THINKER

Unthinking matter cannot produce thought, so the eternal being cannot be matter.

4.10.9 *Two sorts of beings, cogitative and incogitative.*—There are only two sorts of beings in the world that man knows or conceives of.

First, those that are purely material, without sense, perception, or thought, like the clippings of our beards and the parings of our nails.

Second, sensible, thinking, perceiving beings, such as we find ourselves to be. If you like, we will from now on call the two sorts cogitative and incogitative beings. For our present purpose, if for nothing else, these are perhaps better terms than material and immaterial.

4.10.10 *Incogitative beings cannot produce a cogitative one.*—If, then, there must be something eternal, let us see what sort of being it must be. It is very obvious to reason that it must necessarily be a cogitative being. For it is as impossible to conceive that bare incogitative matter could ever produce a thinking, intelligent being as that nothing could of itself produce matter.

Suppose any parcel of matter, large or small, to be eternal: we will find that in itself it is able to produce nothing. For example, let us suppose that the matter of the next pebble we come across is eternal, closely united, with its parts firmly at rest together. If there were no other being in the world, would it not have to remain that way eternally, a dead, inactive lump? Is it possible to conceive that it could add motion to itself, being purely matter, or produce anything? Matter, then, cannot by its own strength produce even so much as motion in itself. The motion it has must either also be from eternity, or else be produced and added to matter by some other being more powerful than matter, since matter, as is evident, has no power to produce motion in itself. But let us suppose that motion is eternal too. Still, matter (incogitative matter and motion), whatever changes of figure and bulk it might produce, could never produce thought. Knowledge will still be as far beyond the power of motion and matter to produce as matter is beyond the power of nothing, or nonentity, to produce. And I appeal to everyone's own thoughts: can he not conceive matter produced by nothing as easily as thought produced by pure matter, when before there was no such thing as thought, or any intelligent being in existence? Divide matter into parts as minute as you like (which we are apt to imagine is a sort of spiritualizing of it, or making a thinking thing of it). Vary its figure and motion as much as you please. A globe, cube, cone, prism, cylinder, etc., whose diameters are about one-millionth of a gry[24], will act on other bodies of proportionate bulk no differently than bodies an inch or a foot in diameter do. And you may as rationally expect to produce sense, thought, and know-

24 LOCKE'S NOTE. A gry is a tenth of a line, a line a tenth of an inch, an inch a tenth of a philosophical foot, and a philosophical foot a third of a pendulum whose diadroms, at the latitude of 45 degrees, each equal one second of time, or a sixtieth of a minute. I have deliberately used this measure here, with its parts in a decimal division and names for them, because I think it would be generally convenient for this to be the common measure in the commonwealth of letters.

TRANSLATOR'S NOTE. A diadrom is a single swing of a pendulum. Locke is proposing a decimal system of length based on the seconds pendulum, a scheme then discussed among natural philosophers.

ledge by putting together coarse particles of matter in a certain figure and motion as by putting together the very smallest particles that exist anywhere. They knock against, push, and resist one another, just as the larger ones do, and that is all they can do. So if we suppose nothing to be first, or eternal, matter can never begin to be. If we suppose bare matter without motion to be eternal, motion can never begin to be. If we suppose only matter and motion to be first, or eternal, thought can never begin to be. For it is impossible to conceive that matter, either with or without motion, could originally have sense, perception, and knowledge in and from itself. This is evident from the fact that sense, perception, and knowledge would then have to be a property eternally inseparable from matter and from every particle of it. Not to add that, although our general or specific conception of matter makes us speak of it as one thing, in reality all matter is not one individual thing. Nor does there exist, so far as we know or can conceive, any such thing as one material being, or one single body. So if matter were the eternal first cogitative being, there would not be one eternal, infinite cogitative being, but an infinite number of eternal, finite cogitative beings, independent of one another, of limited force and with distinct thoughts, which could never produce the order, harmony, and beauty that are found in nature. Whatever is the first eternal being must necessarily be cogitative. Whatever is first of all things must necessarily contain within it, and actually have, at least all the perfections that can ever afterward exist, and it can never give another thing any perfection that it does not have, either actually in itself or at least in a higher degree. Therefore it necessarily follows that the first eternal being cannot be matter.

4.10.11 *Therefore there has been an eternal wisdom.*—If, therefore, it is evident that something must necessarily exist from eternity, it is equally evident that this something must necessarily be a cogitative being. For it is as impossible that incogitative matter should produce a cogitative being as that nothing, or the negation of all being, should produce a positive being, or matter.

4.10.12 This discovery of the necessary existence of an eternal mind is enough to lead us to the knowledge of God. It follows from it that all other knowing beings that have a beginning must depend on him, and have no other ways of knowing, and no other extent of power, than what he gives them. Therefore, if he made those beings, he also made the less excellent pieces of this universe, all inanimate beings. By this his omniscience, power, and providence will be established, and all his other attributes will necessarily follow. Still, to clear this up a little further, we will see what doubts can be raised against it.

4.10.13 *Whether material or not.*—First, it may be said that, though it is as clear as demonstration can make it that there must be an eternal being, and that this being must also be knowing, it does not follow that this thinking being cannot also be material. Let it be so: it still follows just as much that there is a God. For if there is an eternal, omniscient, omnipotent being, it is certain that there is a God, whether you imagine that being to be material or not. But here, I suppose, lies the danger and the trick of that supposition. Since there is no way to avoid the demonstration that there is an eternal knowing being, men devoted to matter would gladly have it granted that this knowing being is material. Then, letting slip out of their minds, or out of the discussion, the demonstration by which an eternal knowing being was proved to exist necessarily, they would argue that everything is matter, and so deny a God, that is, an eternal cogitative being. In doing so they are so far from establishing their own hypothesis that they destroy it. For if, in their opinion, there can be eternal matter without any eternal cogitative being, they plainly separate matter and thinking, and suppose no necessary connection between the one and the other. So they establish the necessity of an eternal spirit, but not of matter, since it has already been proved that an eternal cogitative being must unavoidably be granted. Now if thinking and matter can be separated, the eternal existence of matter will not follow from the eternal existence of a cogitative being, and they suppose it to no purpose.

4.10.14 *Not material:* 1. *Because not every particle of matter is cogitative.*—But now let us suppose they can satisfy themselves, or others, that this eternal thinking being is material.

First, I would ask them whether they imagine that all matter, every particle of matter, thinks. This, I suppose, they will hardly say, since then there would be as many eternal thinking beings as there are particles of matter, and so an infinity of gods. And yet if they will not allow matter as matter, that is, every particle of matter, to be cogitative as well as extended, they will have as hard a task making out to their own reason a cogitative being built from incogitative particles as an extended being built from unextended parts, if I may put it that way.

4.10.15 2. *One particle of matter alone cannot be cogitative.*—Second, if all matter does not think, I next ask, "Is it only one atom that does so?" This has as many absurdities as the other. For then this atom of matter must either be eternal alone, or not. If it alone is eternal, then it alone, by its powerful thought or will, made all the rest of matter. And so we have the creation of matter by a powerful thought, which is exactly what the materialists balk at. For if they suppose that one single thinking atom produced all the rest of matter, they cannot ascribe that pre-eminence to it on any account other than its thinking, the only supposed difference. But grant that it was done in some other way, beyond our conception: it must still be creation, and these men must give up their great maxim, *ex nihilo nil fit*. If it is said that all the rest of matter is as eternal as that thinking atom, that is to say anything one likes, however absurd. For to suppose all matter eternal, and yet one small particle infinitely above all the rest in knowledge and power, is to frame a hypothesis without the least appearance of reason.[25] Every particle of matter, as matter, is capable of all the same figures and motions as any other; and I challenge anyone to add, in his thoughts, anything else to one particle over another.

4.10.16 3. *A system of incogitative matter cannot be cogitative.*—If, then, this eternal thinking being can be neither one particular

atom alone, nor all matter as matter, that is, every particle of matter, it only remains that it is some certain system of matter, properly put together. This, I imagine, is the notion of God most readily held by those who would have him be a material being. It is the notion most readily suggested to them by the ordinary conception they have of themselves and other men, whom they take to be material thinking beings. But this imagination, however more natural, is no less absurd than the other. To suppose that the eternal thinking being is nothing but a composition of particles of matter, each of which is incogitative, is to ascribe all the wisdom and knowledge of that eternal being merely to the juxtaposition of parts, and nothing could be more absurd than that. For unthinking particles of matter, however they are put together, can have nothing added to them by it except a new relation of position, and it is impossible that this should give them thought and knowledge.

4.10.17 *Whether in motion or at rest.*—Further, this corporeal system either has all its parts at rest, or its thinking consists in a certain motion of the parts. If it is perfectly at rest, it is just one lump, and so can have no privileges above a single atom.

If it is the motion of its parts on which its thinking depends, all its thoughts must unavoidably be accidental and limited. All the particles that cause thought by their motion are each of them in itself without any thought, so none of them can regulate its own motions, much less be regulated by the thought of the whole. For that thought is not the cause of the motion (for then it would have to come before it, and so exist without it) but its consequence. In this way freedom, power, choice, and all rational and wise thinking or acting are entirely taken away, so that such a thinking being will be no better or wiser than pure blind matter. For to reduce everything to the accidental, unguided motions of blind matter, or to thought depending on the unguided motions of blind matter, is the same thing. And this is not to mention the narrowness of the thoughts and know-

25 Latin: "nothing comes from nothing," the ancient principle of Lucretius and the atomists.

ledge that must depend on the motion of such parts. But there is no need to list any more absurdities and impossibilities in this hypothesis (however full of them it is) than the one already mentioned. For whether this thinking system is all or only part of the matter of the universe, it is impossible that any one particle should know either its own motion or that of any other particle, or that the whole should know the motion of every particle. So it cannot regulate its own thoughts or motions, or indeed have any thought resulting from such motion.

CREATION OUT OF NOTHING

Locke answers those who make matter eternal alongside God, comparing creation with voluntary motion.

4.10.18 *Matter not coeternal with an eternal mind.*—Others would have matter be eternal, even though they allow an eternal, cogitative, immaterial being. This does not take away the being of a God, but it denies one of his great pieces of workmanship, and the first of them, the creation, so let us consider it a little. Matter must be granted to be eternal. Why? Because you cannot conceive how it could be made out of nothing. Then why do you not also think yourself eternal? You will perhaps answer: because you began to be about twenty or forty years ago. But if I ask you what that "you" is which began to be then, you can hardly tell me. The matter you are made of did not begin to be then, for if it did, it is not eternal. But it began to be put together in the fashion and frame that makes up your body. Yet that frame of particles is not you; it does not make up the thinking thing you are (for I am now dealing with someone who allows an eternal, immaterial, thinking being, but would have unthinking matter be eternal too). So when did that thinking thing begin to be? If it never began to be, then you have always been a thinking thing, from eternity. I need not refute the absurdity of this until I meet someone so devoid of understanding as to own it. If, therefore, you can allow that a thinking thing is made out of nothing (as everything that is not eternal must be), why can you

not also allow that it is possible for a material being to be made out of nothing by an equal power? Is it only that you have experience of the one in view and not of the other? And yet, when well considered, the creation of a spirit will be found to require no less power than the creation of matter. Indeed, if we would free ourselves from common notions and raise our thoughts as far as they would reach, to a closer contemplation of things, we might perhaps be able to arrive at some dim and apparent conception of how matter might at first have been made, and begun to exist, by the power of that eternal first being. But to give a beginning and being to a spirit would be found a still more inconceivable effect of omnipotent power. But since this would perhaps lead us too far from the notions on which the philosophy now current in the world is built, it would not be pardonable to depart so far from them, or to pursue the inquiry as far as grammar itself would allow, if the common settled opinion is against it. This is especially so here, where the received doctrine serves our present purpose well enough, and puts this beyond doubt: once the creation, or beginning, of any one substance out of nothing is admitted, the creation of all others except the Creator himself may be supposed with the same ease.

4.10.19 But, you will say, is it not impossible to admit the making of anything out of nothing, since we cannot possibly conceive it? I answer: No. 1. Because it is not reasonable to deny the power of an infinite being because we cannot comprehend its operations. We do not deny other effects on the ground that we cannot possibly conceive the manner of their production. We cannot conceive how anything but the impulse of a body can move a body. Yet that is not reason enough to make us deny that it is possible, against the constant experience we have of it in ourselves in all our voluntary motions. These are produced in us only by the free action or thought of our own minds. They are not, and cannot be, the effects of the impulse or determination of the motion of blind matter in or on our own bodies, for then it could not be in our power or choice to alter it. For example: my right hand writes while my left hand is still. What causes rest in the one

and motion in the other? Nothing but my will, a thought of my mind. My thought alone changes, and the right hand rests and the left hand moves. This is a matter of fact that cannot be denied. Explain this and make it intelligible, and the next step will be to understand creation. For giving a new determination to the motion of the animal spirits (which some use to explain voluntary motion) does not clear up the difficulty one bit. In this case, altering the determination of motion is no easier, and no less, than giving motion itself. For the new determination given to the animal spirits must be given either directly by thought, or by some other body that thought has put in their way which was not in their way before, and which must therefore owe its motion to thought. Either way, voluntary motion remains as unintelligible as it was before. Meanwhile, it is overvaluing ourselves to reduce everything to the narrow measure of our capacities, and to conclude that anything whose manner of being done exceeds our comprehension cannot be done. This is to make our comprehension infinite, or God finite, when what he can do is limited to what we can conceive of it. If you do not understand the operations of your own finite mind, that thinking thing within you, do not think it strange that you cannot comprehend the operations of that eternal, infinite mind who made and governs all things, and whom the heaven of heavens cannot contain.[26]

KNOWLEDGE OF OTHER THINGS

Sensation assures us of things existing outside us, though only while they are present to our senses.

4.11.1 *It is to be had only by sensation.*—We have the knowledge of our own being by intuition. The existence of a God, reason clearly makes known to us, as has been shown.

We can have the knowledge of the existence of any other thing only by sensation. For there is no necessary connection of real existence with any idea a man has in his memory, nor of

26 "The heaven of heavens cannot contain" echoes 1 Kings 8:27.

any other existence but that of God with the existence of any particular man. So no particular man can know the existence of any other being except when, by actually operating on him, it makes itself perceived by him. For having the idea of anything in our mind no more proves the existence of that thing than the picture of a man proves that he is in the world, or than the visions of a dream thereby make a true history.

4.11.2 *Instance: the whiteness of this paper.*—It is therefore the actual receiving of ideas from outside that gives us notice of the existence of other things. It makes us know that something exists outside us at that time which causes that idea in us, even if we perhaps neither know nor consider how it does so. For it takes nothing away from the certainty of our senses, and of the ideas we receive by them, that we do not know the manner in which they are produced. For example, while I write this, the paper affecting my eyes produces in my mind the idea which I call white, whatever object causes it. By this I know that that quality or accident (that is, the one whose appearance before my eyes always causes that idea) really exists and has a being outside me. And the greatest assurance of this I can possibly have, and which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing. I have reason to rely on their testimony as so certain that, while I write this, I can no more doubt that I see white and black, and that something really exists that causes that sensation in me, than I can doubt that I write or move my hand. This is a certainty as great as human nature is capable of concerning the existence of anything except a man's own self and God.

4.11.3 *This, though not so certain as demonstration, may yet be called knowledge, and proves the existence of things outside us.*—The notice our senses give us of the existence of things outside us is not quite as certain as our intuitive knowledge, or as the deductions of our reason employed about the clear abstract ideas of our own minds. Yet it is an assurance that deserves the name of knowledge. If we persuade ourselves that our faculties act and inform us correctly concerning the existence of the objects that

affect them, this cannot pass for an ill-grounded confidence. For I think nobody can seriously be so skeptical as to be uncertain of the existence of the things he sees and feels. At least, whoever can doubt that far (whatever dispute he may have with his own thoughts) will never have any controversy with me, since he can never be sure that I say anything contrary to his own opinion. As for myself, I think God has given me assurance enough of the existence of things outside me, since by applying them in different ways I can produce both pleasure and pain in myself, which is one great concern of my present state. This much is certain: the confidence that our faculties do not deceive us here is the greatest assurance we are capable of concerning the existence of material beings. For we cannot do anything except by our faculties, nor even talk of knowledge itself except with the help of those faculties which are fitted to apprehend even what knowledge is. But besides the assurance we have from our senses themselves that they do not err in the information they give us of the existence of things outside us when they are affected by them, we are further confirmed in this assurance by other concurring reasons.

4.11.4 1. *Because we cannot have them except through the inlet of the senses.*—First, it is plain that those perceptions are produced in us by external causes affecting our senses, because those who lack the organs of any sense can never have the ideas belonging to that sense produced in their minds. This is too evident to be doubted, and so we cannot help being assured that they come in by the organs of that sense, and in no other way. It is plain that the organs themselves do not produce them; for then a man's eyes would produce colors in the dark, and his nose would smell roses in winter. But we see that nobody gets the taste of a pineapple until he goes to the Indies, where it is found, and tastes it.

4.11.5 2. *Because an idea from actual sensation and one from memory are very distinct perceptions.*—Second, because I sometimes find that I cannot avoid having those ideas produced in my mind. When my eyes are shut, or the windows are closed, I can recall to my mind at will the ideas of light, or of the sun,

which earlier sensations had lodged in my memory. And I can put that idea aside at will and take into view the idea of the smell of a rose, or the taste of sugar. But if I turn my eyes toward the sun at noon, I cannot avoid the ideas that the light, or the sun, then produces in me. So there is an obvious difference between the ideas stored in my memory (over which, if they were only there, I would always have the same power to dispose of them and set them aside at will) and those which force themselves on me and which I cannot avoid having. Therefore it must be some external cause, the brisk action of some objects outside me whose efficacy I cannot resist, that produces those ideas in my mind whether I want them or not. Besides, everyone perceives in himself the difference between contemplating the sun as he has the idea of it in his memory and actually looking at it. His perception of these two is so distinct that few of his ideas are more distinguishable from one another. And so he has certain knowledge that they are not both memory, or actions of his mind, and fancies merely within him, but that actual seeing has a cause outside him.

4.11.6 3. *The pleasure or pain that accompanies actual sensation does not accompany the return of those ideas without the external objects.* —Third, add to this that many of those ideas are produced in us with pain, and yet afterward we remember them without the least discomfort. Thus the pain of heat or cold, when the idea of it is revived in our minds, gives us no disturbance, though when felt it was very troublesome, and is so again when it is actually repeated. This is caused by the disorder the external object produces in our bodies when applied to them. And we remember the pains of hunger, thirst, or headache without any pain at all. If there were nothing more than ideas floating in our minds and appearances entertaining our fancies, without the real existence of things affecting us from outside, these pains would either never disturb us, or else disturb us constantly, as often as we thought of them. The same may be said of the pleasure that accompanies various actual sensations. And although mathematical demonstrations do not depend on sense, examining them

by diagrams gives great credit to the evidence of our sight, and seems to give it a certainty approaching that of demonstration itself. For it would be very strange for a man to accept as an undeniable truth that one of two angles of a figure, which he measures by the lines and angles of a diagram, is bigger than the other, and yet to doubt the existence of those lines and angles which he uses, by looking at them, to measure it.

4.11.7 4. *Our senses support one another's testimony of the existence of outward things.*—Fourth, in many cases our senses bear witness to the truth of each other's report concerning the existence of sensible things outside us. Someone who sees a fire may, if he doubts whether it is anything more than a mere fancy, feel it too, and be convinced by putting his hand into it. His hand certainly could never be put into such exquisite pain by a mere idea or phantom, unless the pain is a fancy too; and yet, once the burn has healed, he cannot bring that pain on himself again by raising the idea of it.

Thus I see that, while I write this, I can change the appearance of the paper, and, by planning the letters, tell beforehand what new idea it will present the very next moment, simply by drawing my pen over it. That idea will not appear (however much I may imagine it) if my hands stay still, or, even if I move my pen, if my eyes are shut. Nor, once those characters are made on the paper, can I afterward choose but see them as they are, that is, have the ideas of the letters I have made. From this it is obvious that they are not merely the sport and play of my own imagination, when I find that the characters made at the pleasure of my own thoughts do not obey them, nor cease to be whenever I may fancy it, but continue to affect the senses constantly and regularly, according to the shapes I gave them. If we add to this that the sight of them will draw from another man just the sounds I intended beforehand that they should stand for, there will be little reason left to doubt that the words I write really exist outside me. For they cause a long series of regular sounds to affect my ears, which could not be the effect of my imagination, nor could my memory retain them in that order.

IF ALL IS A DREAM

Locke answers the skeptical dreamer: our certainty is as great as our condition needs.

4.11.8 *This certainty is as great as our condition needs.*—But suppose that, after all this, someone is so skeptical as to distrust his senses. He affirms that all we see and hear, feel and taste, think and do during our whole existence is only the series of deluding appearances of a long dream, with no reality in it, and therefore questions the existence of all things, or our knowledge of anything. I must ask him to consider this: if all is a dream, then he only dreams that he raises the question, and so it does not much matter whether a waking man answers him. Still, if he likes, he may dream that I give him this answer: the certainty of things existing *in rerum natura*, when we have the testimony of our senses for it, is not only as great as our constitution can attain, but as great as our condition needs. For our faculties are suited not to the full extent of being, nor to a perfect, clear, comprehensive knowledge of things, free from all doubt and scruple, but to the preservation of us in whom they are, and they are adapted to the uses of life. So they serve our purpose well enough if only they give us certain notice of the things that are convenient or inconvenient to us.[27] For someone who sees a candle burning, and has tested the force of its flame by putting his finger in it, will hardly doubt that this is something existing outside him which does him harm and puts him in great pain. That is assurance enough, since no one requires greater certainty to govern his actions by than what is as certain as his actions themselves. And if our dreamer would like to test whether the glowing heat of a glass furnace is merely a wandering imagination in a drowsy man's fancy, by putting his hand into it he may perhaps be awakened into a certainty, greater than he could wish, that it is something more than mere imagination. So this evidence is as great as we can desire, being as cer-

27 Latin: "in the nature of things," that is, in reality.

tain to us as our pleasure or pain, that is, our happiness or misery, beyond which we have no concern either in knowing or in being. Such an assurance of the existence of things outside us is enough to direct us in obtaining the good and avoiding the evil that they cause, and that is the important concern we have in being made acquainted with them.

4.11.9 *But it reaches no further than actual sensation.*—In short, then, when our senses actually convey any idea into our understandings, we cannot help being satisfied that something really exists outside us at that time. It affects our senses, makes itself known through them to our faculties of apprehension, and actually produces the idea we then perceive. And we cannot distrust their testimony so far as to doubt that such collections of simple ideas as we have observed by our senses to be united together really do exist together. But this knowledge extends as far as the present testimony of our senses, employed about particular objects that are then affecting them, and no further. For suppose I saw such a collection of simple ideas as is usually called a man existing together a minute ago, and am now alone. I cannot be certain that the same man exists now, since there is no necessary connection between his existence a minute ago and his existence now. He may have ceased to be in a thousand ways since I had the testimony of my senses for his existence. And if I cannot be certain that the man I saw last today is now in being, I can be still less certain of one who has been removed from my senses longer, whom I have not seen since yesterday, or since last year. And I can be much less certain of the existence of men I have never seen. And therefore, though it is highly probable that millions of men exist now, yet, while I am alone writing this, I do not have that certainty of it which we strictly call knowledge. Its great likelihood does put it beyond doubt for me, and it is reasonable for me to do many things in the confidence that there are men now in the world (and men of my acquaintance, too, with whom I have dealings). But this is only probability, not knowledge.

4.11.10 *Folly to expect demonstration in everything.*—From this we may observe how foolish and vain a thing it is for a man of narrow knowledge, who has been given reason to judge the different evidence and probability of things and to be swayed accordingly—how vain, I say, it is for him to expect demonstration and certainty in things not capable of it. It is vain to refuse assent to very rational propositions, and to act contrary to very plain and clear truths, because they cannot be made so evident as to overcome every (I will not say reason, but) pretense of doubting. Someone who, in the ordinary affairs of life, would admit nothing but direct, plain demonstration would be sure of nothing in this world except perishing quickly. The wholesomeness of his food or drink would not give him reason to venture on it; and I would like to know what he could do on grounds that allow no doubt and no objection.

4.11.11 *Past existence is known by memory.*—Just as, when our senses are actually employed about any object, we know that it exists, so by our memory we may be assured that things which affected our senses in the past have existed. And so we have knowledge of the past existence of various things, of which our senses have informed us and whose ideas our memories still retain; and of this we are beyond all doubt as long as we remember well. But this knowledge also reaches no further than our senses have previously assured us. Thus, seeing water at this instant, it is an unquestionable truth to me that water exists. And remembering that I saw it yesterday, it will also always be true, and, as long as my memory retains it, always an undoubted proposition to me, that water existed on July 10, 1688. It will be equally true that a certain number of very fine colors existed, which I saw at the same time on a bubble of that water; but, being now quite out of sight of both the water and the bubbles, I know no more certainly that the water exists now than that the bubbles, or the colors on them, do. For it is no more necessary that water should exist today because it existed yesterday than that the colors or bubbles should exist today because they existed yesterday. It is, however, vastly more probable, because

water has been observed to continue in existence for a long time, while bubbles and the colors on them quickly cease to be.

SPIRITS AND GENERAL TRUTHS

The existence of finite spirits is a matter of faith, while propositions about abstract ideas are eternal truths.

4.11.12 *The existence of spirits cannot be known.*—I have already shown what ideas we have of spirits and how we come by them. But though we have those ideas in our minds, and know we have them there, having ideas of spirits does not make us know that any such things exist outside us, or that there are any finite spirits, or any spiritual beings other than the eternal God. We have grounds from revelation, and several other reasons, to believe with assurance that there are such creatures. But since our senses cannot discover them, we lack the means of knowing their particular existences. For the idea of such beings in our minds can no more tell us that finite spirits really exist than anyone's ideas of fairies or centaurs can tell him that things answering those ideas really exist.

And therefore, concerning the existence of finite spirits, as well as several other things, we must content ourselves with the evidence of faith; universal certain propositions on this matter are beyond our reach. For however true it may be, for example, that all the intelligent spirits God ever created still exist, it can never be part of our certain knowledge. We may assent to these and similar propositions as highly probable, but I fear that in this state we are not capable of knowing them. We should not, then, require others to demonstrate, nor set ourselves to search for universal certainty, in any of those matters in which we are capable of no other knowledge than what our senses give us in this or that particular case.

4.11.13 *Particular propositions concerning existence can be known.*—From this it appears that there are two sorts of propositions. 1. One sort concerns the existence of anything answering to a given idea. For example, having the idea of an elephant, a

phoenix, motion, or an angel in my mind, the first and natural question is whether such a thing exists anywhere. And this knowledge is only of particulars. Apart from God alone, the existence of nothing outside us can be certainly known beyond what our senses tell us. 2. Another sort of propositions expresses the agreement or disagreement of our abstract ideas and their dependence on one another. Such propositions may be universal and certain. So, having the idea of God and of myself, of fear and of obedience, I cannot help being sure that God is to be feared and obeyed by me. And this proposition will be certain concerning man in general if I have made an abstract idea of such a species, of which I am one particular member. But this proposition, however certain—that men ought to fear and obey God—does not prove to me that there are men in the world. It will simply be true of all such creatures whenever they do exist. The certainty of such general propositions depends on the agreement or disagreement to be discovered in those abstract ideas.

4.11.14 *And general propositions concerning abstract ideas.*—In the former case, our knowledge is the consequence of the existence of things producing ideas in our minds through our senses. In the latter, knowledge is the consequence of the ideas (whatever they may be) that are in our minds, producing general certain propositions there. Many of these are called *æternæ veritates*, eternal truths, and indeed all of them are. This is not because all or any of them are written in the minds of all men. Nor is it because any of them was a proposition in anyone's mind until he got the abstract ideas and joined or separated them by affirmation or negation. But wherever we can suppose such a creature as man is, endowed with such faculties and thereby furnished with such ideas as we have, we must conclude that, when he applies his thoughts to considering his ideas, he must know the truth of certain propositions. These will arise from the agreement or disagreement he perceives in his own ideas. Such propositions are therefore called eternal truths, not because they are eternal propositions actually formed and existing prior to

the understanding that at any time makes them. Nor is it because they are imprinted on the mind from some patterns that are somewhere outside the mind and existed before. It is because, once they have been made about abstract ideas so as to be true, they will always actually be true whenever they can be supposed to be made again, at any time past or to come, by a mind that has those ideas. For names are supposed always to stand for the same ideas, and the same ideas always have the same unchanging relations to one another. So propositions about any abstract ideas that are once true must be eternal truths.

THE IMPROVEMENT OF KNOWLEDGE

Knowledge grows from clear ideas and intermediate proofs, not from maxims or borrowed principles.

4.12.1 *Knowledge does not come from maxims.*—It has been the commonly received opinion among men of learning that maxims are the foundation of all knowledge. Each of the sciences, they held, is built on certain *praecognita* (things known in advance), from which the understanding was to set out and by which it was to guide itself in its inquiries into the matters belonging to that science. So the well-worn road of the schools has been to lay down at the beginning one or more general propositions as foundations on which to build the knowledge to be had of that subject. These doctrines, laid down in this way as foundations of a science, were called principles, as being the beginnings from which we must set out, looking no further back in our inquiries, as we have already observed.

4.12.2 (*What gave rise to that opinion.*)—One thing that probably gave rise to this way of proceeding in other sciences was, I suppose, the success it seemed to have in mathematics. Men were seen to attain great certainty of knowledge there, and so these sciences came to be called, by pre-eminence, *mathēmata* and *mathēsis*—learning, or things learned, thoroughly learned—as having the greatest certainty, clearness, and evidence of all.

4.12.3 *But from comparing clear and distinct ideas.*—But anyone who considers it will, I think, find that the great advancement and certainty of real knowledge that men reached in these sciences was not owing to the influence of these principles. Nor was it derived from any special advantage they got from two or three general maxims laid down at the beginning. It came from the clear, distinct, complete ideas their thoughts were occupied with. It also came from the relation of equality and excess, which was so clear between some of these ideas that they had an intuitive knowledge of it, and through that a way to discover it in others—and all this without the help of those maxims. For I ask: is it impossible for a young boy to know that his whole body is bigger than his little finger except by virtue of the axiom that the whole is bigger than a part? Can he not be sure of it until he has learned that maxim? Or take a country girl who has received a shilling from someone who owes her three, and a shilling also from another who owes her three. Can she not know that the remaining debts of each are equal? Can she not know this, I say, unless she fetches its certainty from the maxim that if you take equals from equals the remainders will be equal—a maxim she has perhaps never heard of or thought about? I ask anyone to consider, in light of what has been said elsewhere, which is known first and most clearly by most people—the particular instance or the general rule—and which of them gives life and birth to the other. These general rules are nothing but comparisons of our more general and abstract ideas. Those ideas are the workmanship of the mind, made and given names for the easier dispatch of its reasonings, and for gathering its many and varied observations into comprehensive terms and short rules. But knowledge began in the mind and was founded on particulars, though perhaps no notice is taken of this afterward. For it is natural for the mind (always eager to enlarge its knowledge) to store up those general notions with great care and to make the proper use of them, which is to relieve the memory of the cumbersome load of particulars. For I ask you to consider this. Suppose you have given a child's body the name whole and his little

finger the name part. What more certainty does he, or anyone, then have that his body, little finger and all, is bigger than his little finger alone, than he could have had before? Or what new knowledge about his body can these two relative terms give him that he could not have without them? Could he not know that his body was bigger than his little finger if his language were still so imperfect that he had no such relative terms as whole and part? I ask further: when he has got these names, how is he any more certain that his body is a whole and his little finger a part than he was, or might have been, before he learned those terms, that his body was bigger than his little finger? Anyone may as reasonably doubt or deny that his little finger is a part of his body as that it is smaller than his body. And whoever can doubt whether it is smaller will just as surely doubt whether it is a part. So the maxim that the whole is bigger than a part can never be used to prove the little finger smaller than the body except when it is useless, because it is brought in to convince someone of a truth he already knows. For whoever does not know for certain that any parcel of matter with another parcel of matter joined to it is bigger than either of them alone will never be able to know it with the help of these two relative terms, whole and part, make whatever maxim of them you please.

4.12.4 *It is dangerous to build on shaky principles.*—But let it be as it will in mathematics. Take an inch from a black line two inches long and an inch from a red line two inches long. Is it clearer that the remaining parts of the two lines will be equal, or that if you take equals from equals the remainders will be equal? Which of these two, I say, is clearer and known first, I leave to anyone to decide, since it does not matter for my present purpose. What I have to do here is to inquire into something else. Suppose the readiest way to knowledge is to begin with general maxims and build on them. Is it nevertheless a safe way to take the principles laid down in any other science as unquestionable truths? Should we accept them without examination and hold to them without allowing them to be doubted, just because math-

ematicians have been so fortunate, or so fair, as to use none but self-evident and undeniable ones? If so, I do not know what may not pass for truth in morality, or what may not be introduced and proved in natural philosophy.

Let that principle of some philosophers, that all is matter and there is nothing else, be accepted as certain and beyond doubt. It will then be easy to see, from the writings of some who have revived it in our own day, what consequences it will lead us into. Let anyone take the world to be God, with Polemo; or the ether, or the sun, with the Stoics; or the air, with Anaximenes—and what a theology, religion, and worship we must have! Nothing can be as dangerous as principles taken up like this without questioning or examination. This is especially so if they concern morality, which influences men's lives and gives a bias to all their actions.[28] Who would not rightly expect a different kind of life from Aristippus, who placed happiness in bodily pleasure, than from Antisthenes, who held virtue sufficient for happiness? And whoever, with Plato, places blessedness in the knowledge of God will have his thoughts raised to other contemplations than those of people who look no further than this spot of earth and the perishing things to be had in it. Whoever, with Archelaus, lays it down as a principle that right and wrong, honest and dishonest, are defined only by laws and not by nature will have different measures of moral rightness and depravity. They will differ from those of people who take it for granted that we are under obligations prior to all human institutions.[29]

4.12.5 *This is no certain way to truth.*—Suppose, then, that what passes for principles is not certain, but is made so to us only by our blind assent. (We must have some way of knowing whether they are certain, so that we can tell them apart from doubtful ones.) In that case we are liable to be misled by them. Instead of

28 Polemo (d. c. 270 BC) headed Plato's Academy; Anaximenes of Miletus (6th century BC) made air the first principle of things. The modern reviver of materialism Locke has in mind is probably Thomas Hobbes.

29 Aristippus of Cyrene founded the pleasure-centered Cyrenaic school; Antisthenes, a pupil of Socrates, was seen as the forerunner of the Cynics; Archelaus (5th century BC) was reputedly a teacher of Socrates.

being guided into truth, we shall only be confirmed in mistake and error by our principles.

4.12.6 *But to compare clear, complete ideas under steady names.*—The knowledge of the certainty of principles, like that of all other truths, depends only on our perception of the agreement or disagreement of our ideas. So the way to improve our knowledge is not, I am sure, to receive and swallow principles blindly, with implicit faith. It is, I think, to get and fix in our minds clear, distinct, and complete ideas, as far as they can be had, and to attach proper and constant names to them. And in this way, perhaps, we need no other principles. By simply considering those ideas and comparing them with one another, we can find their agreement and disagreement and their various relations. By following this one rule we shall get more true and clear knowledge than by taking up principles and thereby putting our minds at the disposal of others.

4.12.7 *The true method of advancing in knowledge is by considering our abstract ideas.*—If we will proceed as reason advises, then, we must adapt our methods of inquiry to the nature of the ideas we examine and the truth we are searching for. General and certain truths are founded only in the relations of abstract ideas. A shrewd and methodical application of our thoughts to finding out these relations is the only way to discover everything about them that can be put into general propositions with truth and certainty. The steps by which we should proceed in these matters are to be learned in the schools of the mathematicians. From very plain and easy beginnings, by gentle degrees and an unbroken chain of reasoning, they go on to discover and demonstrate truths that at first sight seem beyond human capacity. They have invented an art of finding proofs, and admirable methods for singling out and setting in order the intermediate ideas that demonstratively show the equality or inequality of quantities that cannot be laid one upon another. This is what has carried them so far and produced such wonderful and unexpected discoveries. Whether something like this may not in time be found for other ideas, as well as for those of magnitude, I will

not decide. This much, I think, I may say. Suppose other ideas that are the real as well as the nominal essences of their species were pursued in the way familiar to mathematicians. They would then carry our thoughts further, and with greater evidence and clearness, than we are perhaps inclined to imagine.

4.12.8 *By which morality too may be made clearer.*—This gave me the confidence to put forward the conjecture I suggested in Chapter 3, namely, that morality is capable of demonstration as well as mathematics. For the ideas that ethics deals with are all real essences, and such as, I imagine, have a discoverable connection and agreement with one another. So as far as we can find their relations, we shall possess certain, real, and general truths. And I do not doubt that, if a right method were taken, a great part of morality might be worked out with great clearness. A thoughtful man would then have no more reason to doubt it than he could have to doubt the truth of propositions in mathematics that have been demonstrated to him.[30]

NATURAL PHILOSOPHY BY EXPERIENCE

Knowledge of bodies advances only by experiment, so natural philosophy cannot become a science.

4.12.9 *But knowledge of bodies can be improved only by experience.*—In our search for knowledge of substances, we lack ideas suited to such a way of proceeding, and this forces us into a quite different method. Here we do not advance, as in the other case (where our abstract ideas are real as well as nominal essences), by contemplating our ideas and considering their relations and correspondences. That helps us very little, for reasons we have set out at length elsewhere. From this I think it is evident that substances provide material for very little general knowledge. The bare contemplation of their abstract ideas will carry us only a very little way in the search for truth and certainty. What, then, are we to do to improve our knowledge of substantial beings? Here we must take quite the opposite course. The lack of ideas of

30 See 4.3.18.

their real essences sends us away from our own thoughts to the things themselves as they exist. Here experience must teach me what reason cannot. Only by trying can I know for certain what other qualities coexist with those in my complex idea—for example, whether the yellow, heavy, fusible body I call gold is malleable or not. And this experience (whichever way it turns out in the particular body I examine) does not make me certain that it is so in all, or in any, other yellow, heavy, fusible bodies than the one I have tried. For it follows neither way from my complex idea. The necessity or inconsistency of malleability has no visible connection with the combination of that color, weight, and fusibility in any body. What I have said here of the nominal essence of gold, supposed to consist of a body of a certain determinate color, weight, and fusibility, will still hold true if malleability, fixedness, and solubility in aqua regia are added to it. Our reasonings from these ideas will carry us only a little way toward certainly discovering the other properties of those masses of matter in which all these are found. For the other properties of such bodies depend not on these, but on that unknown real essence on which these too depend. So we cannot discover the rest by means of them. We can go no further than the simple ideas of our nominal essence will carry us, which is very little beyond themselves. And so they provide us with very few certain, universal, and useful truths. Suppose I have found on trial that this particular piece is malleable (and all others of that color, weight, and fusibility that I ever tried). That too perhaps now becomes part of my complex idea, part of my nominal essence of gold. I thereby make the complex idea to which I attach the name gold consist of more simple ideas than before. Still, since it does not contain the real essence of any species of bodies, it does not help me to know with certainty the other remaining properties of that body. (To know, I say—perhaps it may help me to conjecture.) It helps only so far as they have a visible connection with some or all of the simple ideas that make up my nominal essence. For example, I cannot be certain from this complex idea whether gold is fixed or not. For, as

before, there is no necessary connection or inconsistency to be discovered between the complex idea of a body that is yellow, heavy, fusible, and malleable—between these, I say, and fixedness. So I cannot know for certain that in whatever body these are found, fixedness is sure to be there too. Here again, for assurance, I must turn to experience. As far as that reaches I may have certain knowledge, but no further.

4.12.10 *This may win us conveniences, not science.*—I do not deny that a man accustomed to rational and regular experiments will see further into the nature of bodies, and guess more accurately at their still unknown properties, than someone unfamiliar with them. But still, as I have said, this is only judgment and opinion, not knowledge and certainty. We can get and improve our knowledge of substances only by experience and history, which is all that the weakness of our faculties can achieve in the middling state we are in in this world. This makes me suspect that natural philosophy is not capable of being made a science. We are able, I imagine, to reach very little general knowledge about the species of bodies and their various properties. We may have experiments and historical observations. From them we can draw advantages of ease and health, and so increase our stock of conveniences for this life. But beyond this, I fear, our talents do not reach, nor, I suspect, are our faculties able to advance.

4.12.11 *We are fitted for moral knowledge and natural improvements.* —From this the obvious conclusion follows. Our faculties are not fitted to penetrate the internal structure and real essences of bodies. Yet they plainly reveal to us the existence of a God and give us knowledge of ourselves, enough to lead us to a full and clear discovery of our duty and our great concern. It therefore befits us, as rational creatures, to employ the faculties we have on what they are suited to, and to follow the direction of nature where it seems to point out the way to us. For it is rational to conclude that our proper occupation lies in those inquiries, and that sort of knowledge, best suited to our natural capacities and carrying with it our greatest interest, that is, the condition of our eternal state. Hence I think I may conclude that morality is

the proper science and business of mankind in general, since all are both concerned and fitted to search out their *summum bonum*, their highest good. Just so, various arts dealing with various parts of nature are the lot and private talent of particular men, for the common use of human life and their own particular subsistence in this world. How much the discovery of one natural body and its properties may matter to human life, the whole great continent of America is a convincing instance. Its peoples lacked the useful arts and most of the conveniences of life in a country that abounded in every sort of natural plenty. I think this may be attributed to their ignorance of what was to be found in a very ordinary, lowly stone—I mean iron ore. And whatever we think of our abilities or advances in this part of the world, where knowledge and plenty seem to compete with each other, I suppose one thing will appear beyond doubt to anyone who seriously reflects on it. If the use of iron were lost among us, we should in a few ages be unavoidably reduced to the wants and ignorance of the ancient Native Americans, whose natural endowments and resources fall in no way short of those of the most flourishing and refined nations. So whoever first made known the use of that one despised mineral may truly be called the father of the arts and the author of plenty.

4.12.12 *But we must beware of hypotheses and wrong principles.*—I would not, therefore, be thought to undervalue the study of nature or to discourage it. I readily agree that contemplating God's works gives us occasion to admire, revere, and glorify their Author. And, if rightly directed, it may be of greater benefit to mankind than the monuments of exemplary charity raised at such great cost by the founders of hospitals and almshouses. The man who first invented printing, discovered the use of the compass, or made public the power and right use of cinchona bark did more for the spread of knowledge and the supply and increase of useful goods than those who built colleges, workhouses, and hospitals, and saved more people from the grave.[31]

31 Cinchona ("kin kina," Peruvian bark), the source of quinine, was then newly used in Europe against malarial fevers.

All I would say is that we should not too eagerly adopt the opinion or expectation of knowledge where it is not to be had, or by ways that will not reach it. We should not take doubtful systems for complete sciences, nor unintelligible notions for scientific demonstrations. In the knowledge of bodies we must be content to glean what we can from particular experiments. For we cannot discover their real essences, and so we cannot grasp whole sheaves at a time and take in the nature and properties of whole species together in bundles. Some inquiries concern coexistence, or incompatibility of coexistence, which we cannot discover by contemplating our ideas. There, experience, observation, and natural history must give us an insight into bodily substances through our senses, piece by piece. We must get the knowledge of bodies through our senses, carefully employed in noting their qualities and their operations on one another. And what we hope to know of separate spirits in this world we must, I think, expect only from revelation. Consider how little general maxims, shaky principles, and hypotheses laid down at will have promoted true knowledge, or helped satisfy rational men's inquiries after real improvements. Consider how little, I say, setting out from the end has advanced men's progress toward knowledge of natural philosophy over so many ages. Anyone who does so will think we have reason to thank those who in this recent age have taken another course. They have beaten out for us, if not an easier way to learned ignorance, then a surer way to useful knowledge.

4.12.13 *The true use of hypotheses.*—This is not to say that we may not use any probable hypothesis whatever to explain any phenomena of nature. Hypotheses, if well made, are at least great aids to the memory, and often lead us to new discoveries. But my meaning is that we should not adopt any one too hastily, which the mind is very apt to do, since it always wants to penetrate into the causes of things and to have principles to rest on. We should wait until we have thoroughly examined particulars and made several experiments on the thing we would explain by our hypothesis. We should see whether it fits them all—whether

our principles will carry us all the way through, and will not be as inconsistent with one phenomenon of nature as they seem to suit and explain another. And at least we should take care that the name of principles does not deceive us or impose on us. It must not make us accept as an unquestionable truth what is really, at best, a very doubtful conjecture—as most (I had almost said all) of the hypotheses in natural philosophy are.

4.12.14 *Clear and distinct ideas with settled names, and finding those ideas that show their agreement or disagreement, are the ways to enlarge our knowledge.*—But whether or not natural philosophy is capable of certainty, the ways to enlarge our knowledge, as far as we are capable of it, seem to me, in short, to be these two:

First: the first is to get and settle in our minds determinate ideas of the things for which we have general or specific names. We should at least do this for as many of them as we want to consider, improve our knowledge in, or reason about. And if they are specific ideas of substances, we should also try to make them as complete as we can. By this I mean that we should put together as many simple ideas as, being constantly observed to coexist, may perfectly determine the species. And each of those simple ideas, which are the ingredients of our complex ones, should be clear and distinct in our minds. For it is evident that our knowledge cannot go beyond our ideas. So as far as our ideas are imperfect, confused, or obscure, we cannot expect to have certain, perfect, or clear knowledge.

Secondly: the other is the art of finding those intermediate ideas that can show us the agreement or incompatibility of other ideas which cannot be compared immediately.

4.12.15 *Mathematics an instance of this.*—These two are the right methods of improving our knowledge in the ideas of other modes besides those of quantity, not reliance on those maxims and the drawing of consequences from some general propositions. A look at mathematical knowledge will easily show us this. There, first, we shall find that anyone who lacks a perfect knowledge and clear idea of the angles or figures he wants to know something about is utterly incapable of any knowledge

about them. Just suppose a man without a perfect, exact idea of a right angle, a scalene triangle, or a trapezium. Nothing is more certain than that he will look in vain for any demonstration about them. Further, it is evident that it was not the influence of those maxims taken as principles in mathematics that led the masters of that science to the wonderful discoveries they have made. Let a man of good abilities know all the maxims commonly used in mathematics as perfectly as you like, and contemplate their scope and consequences as much as he pleases. He will scarcely ever, I suppose, come to know by their help that the square of the hypotenuse in a right-angled triangle is equal to the squares of the other two sides. The knowledge that the whole is equal to all its parts, and that if you take equals from equals the remainders will be equal, and so on, did not, I presume, help him to this demonstration. A man may, I think, pore over those axioms long enough without ever seeing one jot more of mathematical truth. Such truths have been discovered by thought applied in other ways. When the mind first got the knowledge of these truths in mathematics, it had other objects and other views before it, very different from those maxims. Men who know the received axioms well enough, but not the method of those who first made these demonstrations, can never sufficiently admire those truths. And who knows what methods for enlarging our knowledge in other parts of science may be invented hereafter, corresponding to that of algebra in mathematics? Algebra so readily finds out ideas of quantities to measure others by—quantities whose equality or proportion we could otherwise come to know only with great difficulty, or perhaps never.

KNOWLEDGE PARTLY VOLUNTARY

We choose where to direct our faculties, but not what we find once we look.

4.13.1 *Our knowledge is partly necessary, partly voluntary.*—In this, as in other things, our knowledge closely resembles our sight: it is

neither wholly necessary nor wholly voluntary. If our knowledge were altogether necessary, not only would all men's knowledge be alike, but every man would know everything knowable. And if it were wholly voluntary, some men regard or value it so little that they would have extremely little of it, or none at all. Men who have senses cannot help receiving some ideas through them. If they have memory, they cannot help retaining some of them. And if they have any faculty of distinguishing, they cannot help perceiving the agreement or disagreement of some of them with one another. In the same way, someone who has eyes, if he opens them by day, cannot help seeing some objects and perceiving differences among them. But though a man with his eyes open in the light cannot help seeing, there are still certain objects he may choose whether to turn his eyes toward. There may be within his reach a book containing pictures and writings that could delight or instruct him. Yet he may never have the will to open it, never take the trouble to look into it.

4.13.2 *The application is voluntary, but we know things as they are, not as we please.*—There is another thing in a man's power. Though he sometimes turns his eyes toward an object, he may still choose whether to examine it carefully and, with close attention, try to observe accurately everything visible in it. But what he does see, he cannot see otherwise than he does. It does not depend on his will to see as black what appears yellow, or to persuade himself that what is actually scalding him feels cold. The earth will not appear painted with flowers, nor the fields covered with green, whenever he wants it to. In cold winter he cannot help seeing it white and frosty if he looks outdoors. It is just so with our understanding. All that is voluntary in our knowledge is whether we employ our faculties on this or that sort of objects or withhold them from it, and whether we survey those objects more or less accurately. But once our faculties are employed, our will has no power to determine the mind's knowledge one way or the other. That is done only by the objects themselves, as far as they are clearly revealed. Therefore, as far

as men's senses deal with external objects, the mind cannot help receiving the ideas presented by them and being informed of the existence of things outside it. And as far as men's thoughts deal with their own determinate ideas, they cannot help observing, to some extent, the agreement or disagreement found among some of them, which is so far knowledge. And if they have names for the ideas they have considered in this way, they must be assured of the truth of the propositions that express the agreement or disagreement they perceive in them, and be convinced beyond doubt of those truths. For what a man sees, he cannot help seeing; and what he perceives, he cannot help knowing that he perceives.

4.13.3 *An instance in numbers.*—Thus whoever has got the ideas of numbers, and has taken the trouble to compare one, two, and three with six, cannot help knowing that they are equal. Whoever has got the idea of a triangle, and found ways to measure its angles and their sizes, is certain that its three angles are equal to two right angles. He can doubt that as little as he can doubt the truth "that it is impossible for the same thing to be and not to be."

In natural religion.—So too, suppose someone has the idea of an intelligent but frail and weak being, made by and dependent on another who is eternal, omnipotent, perfectly wise and good. He will know that man is to honor, fear, and obey God as certainly as he knows the sun is shining when he sees it. For if he only has the ideas of two such beings in his mind, and will turn his thoughts that way and consider them, he will certainly find that the inferior, finite, and dependent is under an obligation to obey the supreme and infinite. He will find this as certainly as he will find that three, four, and seven are less than fifteen, if he will consider and add up those numbers. Nor can he be surer on a clear morning that the sun has risen, if he will only open his eyes and turn them that way. But however certain and clear these truths are, a man may be ignorant of any or all of them if he will never take the trouble to employ his faculties, as he should, to inform himself about them.

Book IV: Of Knowledge and Opinion (Chapters XIV–XXI)

Judgment and probability, degrees of assent, reason, faith and reason, enthusiasm, error, and the division of the sciences.

CHAPTER XIV. OF JUDGMENT.

4.14.1 *Since our knowledge is limited, we need something else.*—The faculties of the understanding were given to man not merely for speculation but also for the conduct of his life. So man would be at a great loss if he had nothing to direct him except what has the certainty of true knowledge. That knowledge is very limited and scanty, as we have seen. If he had nothing to guide him where clear and certain knowledge is lacking, he would often be completely in the dark, and in most of the actions of his life he would be brought to a complete standstill. Anyone who will not eat until he has a demonstration that the food will nourish him, or will not move until he knows infallibly that the business he is undertaking will succeed, will have little else to do but sit still and perish.

4.14.2 *What use to make of this twilight state.*—So God has set some things in broad daylight. He has given us some certain knowledge, though it is limited to comparatively few things. He has probably given it as a taste of what intellectual creatures are capable of, to arouse in us a desire for a better state and an effort toward it. But in most of our concerns he has given us only the twilight, so to speak, of probability. This is suited, I presume, to the state of mediocrity and probation in which he has been pleased to place us here. In this state, to check our overconfid-

ence and presumption, every day's experience might make us aware of our shortsightedness and our liability to error. That awareness might be a constant reminder to spend the days of this pilgrimage of ours with industry and care, searching for and following the way that might lead us to a state of greater perfection. For it is highly rational to think, even if revelation were silent on the matter, that as men use the talents God has given them here, so they will receive their rewards at the close of the day, when their sun sets and night puts an end to their labors.

4.14.3 *Judgment supplies the lack of knowledge.*—The faculty God has given man to supply the lack of clear and certain knowledge, in cases where it cannot be had, is judgment. By it the mind takes its ideas to agree or disagree, or, what is the same thing, takes a proposition to be true or false, without perceiving demonstrative evidence in the proofs. The mind sometimes exercises this judgment out of necessity, where demonstrative proofs and certain knowledge are not to be had. Sometimes it does so out of laziness, lack of skill, or haste, even where demonstrative and certain proofs are to be had. Men often do not stop to examine carefully the agreement or disagreement of two ideas that they want or need to know about. Either they are incapable of the attention a long chain of steps requires, or they are impatient of delay. So they glance lightly at the proofs, or pass them by altogether. Without working out the demonstration, they settle the agreement or disagreement of two ideas as if by viewing them at a distance. They take it to be one or the other, whichever seems most likely to them on such a loose survey. When this faculty of the mind is exercised directly about things, it is called judgment. When it is exercised about truths expressed in words, it is most commonly called assent or dissent. This is the most usual way in which the mind has occasion to use this faculty, so I will treat of it under these terms, since they are the least liable to ambiguity in our language.

4.14.4 *Judgment is presuming things to be so without perceiving it.*—So the mind has two faculties concerned with truth and falsehood.

First, knowledge, by which it perceives with certainty the agreement or disagreement of any ideas, and is satisfied of it beyond doubt.

Second, judgment. This is putting ideas together in the mind, or separating them from one another, when their agreement or disagreement is not perceived with certainty but presumed. As the word implies, it is taken to be so before it plainly appears. And if judgment unites or separates them as things really are, it is right judgment.

PROBABILITY

Probability rests on conformity with experience and on testimony, as the Dutch ambassador and the king of Siam show.

4.15.1 *Probability is the appearance of agreement on the basis of fallible proofs.*—Demonstration is showing the agreement or disagreement of two ideas by means of one or more proofs that have a constant, unchangeable, and visible connection with one another. Probability, likewise, is nothing but the appearance of such an agreement or disagreement by means of proofs whose connection is not constant and unchangeable, or at least is not perceived to be so. But it is, or appears to be, so for the most part, and this is enough to induce the mind to judge the proposition true or false, rather than the contrary. For example: in the demonstration of it, a man perceives the certain, unchangeable connection of equality between the three angles of a triangle and the intermediate angles used to show that they are equal to two right angles. At each step of the way he has an intuitive knowledge of the agreement or disagreement of the intermediate ideas. So the whole series is carried through with an evidence that clearly shows the agreement or disagreement of those three angles in being equal to two right angles. In this way he has certain knowledge that it is so. But another man, who never

took the trouble to follow the demonstration, hears a mathematician of good reputation affirm that the three angles of a triangle are equal to two right angles. He assents to it, that is, accepts it as true. In this case the foundation of his assent is the probability of the thing, since the proof is of a kind that for the most part carries truth with it. The man on whose testimony he accepts it is not in the habit of affirming anything contrary to his knowledge or beyond it, especially in matters of this kind. So what causes his assent to this proposition, that the three angles of a triangle are equal to two right angles, is the speaker's usual truthfulness in other cases, or his supposed truthfulness in this one. That is what makes him take these ideas to agree without knowing that they do.

4.15.2 *It is to supply the lack of knowledge.*—As has been shown, our knowledge is very narrow, and we are not fortunate enough to find certain truth in everything we have occasion to consider. Most of the propositions on which we think, reason, and converse, and even act, are such that we cannot have undoubted knowledge of their truth. Yet some of them border so closely on certainty that we have no doubt at all about them. We assent to them as firmly, and act on that assent as resolutely, as if they had been infallibly demonstrated and our knowledge of them were perfect and certain. But there are degrees here, from the very neighborhood of certainty and demonstration all the way down to improbability and unlikelihood, even to the borders of impossibility. There are also degrees of assent, from full assurance and confidence all the way down to conjecture, doubt, and distrust. I have now, as I think, found the bounds of human knowledge and certainty. So I will next consider the several degrees and grounds of probability, and of assent or faith.

4.15.3 *Being what makes us presume things to be true before we know them to be so.*—Probability is likeliness to be true. The very derivation of the word signifies a proposition for which there are arguments or proofs that make it pass as true, or be accepted as true. The reception the mind gives to this sort of proposition is called belief, assent, or opinion. It is admitting or accepting a

proposition as true on the basis of arguments or proofs that persuade us to accept it as true, without certain knowledge that it is so. And this is the difference between probability and certainty, and between faith and knowledge. In all the parts of knowledge there is intuition: each immediate idea, each step, has its visible and certain connection. In belief it is not so. What makes me believe is something extraneous to the thing I believe. It is not evidently joined on both sides to the ideas under consideration, and so it does not plainly show their agreement or disagreement.

4.15.4 *The grounds of probability are two: conformity with our own experience, or the testimony of others' experience.*—The role of probability, then, is to supply the defect of our knowledge and to guide us where knowledge fails. So it is always concerned with propositions of which we have no certainty, but only some inducements to accept them as true. In short, its grounds are these two:

First, the conformity of a thing with our own knowledge, observation, and experience.

Second, the testimony of others, vouching for their observation and experience. In the testimony of others we must consider: 1. The number of the witnesses. 2. Their integrity. 3. Their skill. 4. The aim of the author, where the testimony is cited from a book. 5. The consistency of the parts and circumstances of the account. 6. Contrary testimonies.

4.15.5 *In this all the arguments* pro *and* con *ought to be examined before we come to a judgment.*—Probability lacks the intuitive evidence that infallibly determines the understanding and produces certain knowledge. So if the mind wants to proceed rationally, it ought to examine all the grounds of probability before it assents to a proposition or dissents from it, and see how far they weigh for or against it. After duly balancing the whole, it should reject or accept the proposition with a more or less firm assent, in proportion to the preponderance of the greater grounds of probability on one side or the other. For example:

If I myself see a man walk on the ice, that is beyond probability; it is knowledge. But suppose someone else tells me he saw a man in England, in the middle of a hard winter, walk on water hardened by cold. This conforms so closely to what is usually observed to happen that the nature of the thing itself disposes me to assent to it, unless some obvious ground for suspicion attends the report of that matter of fact. But suppose the same thing is told to someone born between the tropics, who has never seen or heard of any such thing before. Then the whole probability rests on testimony. That matter of fact is likely to find more or less belief as the reporters are more numerous and of better credit, and have no interest in speaking contrary to the truth. But a man whose experience has always been quite the contrary, and who has never heard of anything like it, will hardly believe it even on the word of a witness of the most unblemished credit. This is what happened to a Dutch ambassador who was entertaining the king of Siam with details about Holland, which the king was curious to hear. Among other things he told him that the water in his country would sometimes become so hard in cold weather that men walked on it, and that it would bear an elephant if there were one there. The king replied: "Until now I have believed the strange things you have told me, because I took you for a sober, fair-minded man; but now I am sure you are lying."[1]

4.15.6 *These grounds admit of great variety.*—The probability of any proposition depends on these grounds. A proposition is in itself more or less probable as it agrees or disagrees more or less with our knowledge, the certainty of observations, the frequency and constancy of experience, and the number and credibility of testimonies. There is another ground, I admit, which by itself is no true ground of probability but is often used as one. It is the one by which men most commonly regulate their assent, and on which they pin their faith more than on anything else: namely, the opinion of others. Yet nothing could be more dangerous to rely on, or more likely to mislead us, since there is

1 Siam is the kingdom now called Thailand.

much more falsehood and error among men than truth and knowledge. And if the opinions and convictions of others whom we know and think well of are a ground of assent, then men have reason to be pagans in Japan, Muslims in Turkey, Catholics in Spain, Protestants in England, and Lutherans in Sweden. But I will have occasion to speak more fully of this wrong ground of assent elsewhere.[2]

DEGREES OF ASSENT

Assent should be proportioned to probability, and differences of opinion call for mutual charity and forbearance.

4.16.1 *Our assent ought to be regulated by the grounds of probability.*— We laid down the grounds of probability in the preceding chapter. They are the foundations on which our assent is built, and they are also the measure by which its several degrees are, or ought to be, regulated. Only we should note this: whatever grounds of probability there may be, they act on a mind that seeks truth and tries to judge rightly only as far as they appear to it, at least in the first judgment or inquiry the mind makes. I admit that men do not always hold the opinions they firmly stick to because they actually see the reasons that first won them over. In many cases it is almost impossible, and in most very hard, even for those with remarkable memories, to retain all the proofs that made them embrace that side of the question after due examination. It is enough that they once sifted the matter with care and fairness as far as they could. They should have searched into all the particulars they could think of that might throw any light on the question, and drawn up the account on the whole evidence to the best of their skill. Having once found, after as full and exact an inquiry as they can make, on which side the probability appeared to lie, they store the conclusion in their memories as a truth they have discovered. From then on they remain satisfied with the testimony of their memories.

2 See 4.20, "Of Wrong Assent, or Error."

Their memories tell them that the proofs they once saw for this opinion make it deserve the degree of assent they give it.

4.16.2 *These cannot always be actually in view, and then we must content ourselves with remembering that we once saw grounds for such a degree of assent.*—This is all that most men are capable of doing in regulating their opinions and judgments. Otherwise one would have to demand either of two things. One is that they retain distinctly in their memories all the proofs concerning any probable truth, in the same order and regular chain of consequences in which they formerly placed or saw them, which is sometimes enough to fill a large volume on a single question. The other is that every man examine the proofs every day for every opinion he holds. Both are impossible. It is unavoidable, therefore, that memory be relied on here. Men must be persuaded of several opinions whose proofs are not actually in their thoughts, and which they perhaps cannot actually recall. Without this, most men would have to be complete skeptics. Or else they would change their minds every moment, and give themselves up to anyone who had recently studied the question and offered them arguments that they could not answer on the spot for want of memory.

4.16.3 *The bad consequence of this, if our former judgments were not rightly made.*—I must admit that men's sticking to their past judgments and holding firmly to conclusions formerly reached is often the cause of great obstinacy in error and mistake. But the fault is not that they rely on their memories for what they have previously judged well. It is that they judged before they had examined well. Do we not find a great number of men, not to say most men, who think they have formed right judgments on several matters for no other reason than that they never thought otherwise? Who imagine they have judged rightly only because they never questioned or examined their own opinions? This is in fact to think they judged rightly because they never judged at all. And yet these men, of all men, hold their opinions most stubbornly, for those who have examined their tenets least are generally the fiercest and firmest in them. What we once know,

we are certain is so. We can be sure that there are no hidden proofs yet undiscovered that might overturn our knowledge or call it into doubt. But in matters of probability we cannot in every case be sure that we have before us all the particulars that bear on the question in any way. There may be evidence still behind and unseen that could tip the probability to the other side and outweigh everything that at present seems to preponderate with us. Hardly anyone has the leisure, patience, and means to collect all the proofs concerning most of the opinions he holds, so as to conclude safely that he has a clear and full view, and that nothing more can be alleged to inform him better. And yet we are forced to decide on one side or the other. The conduct of our lives and the management of our great concerns will not allow delay. For the most part these depend on how our judgment decides in matters where we are not capable of certain and demonstrative knowledge, and where we must necessarily embrace one side or the other.

4.16.4 *The right use of this is mutual charity and forbearance.*—It is unavoidable for most men, if not all, to hold several opinions without certain and indubitable proofs of their truth. It would also expose men too much to a charge of ignorance, fickleness, or folly if they abandoned and renounced their former tenets as soon as they were offered an argument they could not immediately answer and show to be insufficient. Therefore it would, I think, become all men to maintain peace and the common duties of humanity and friendship amid the diversity of opinions. For we cannot reasonably expect anyone to give up his own opinion readily and submissively and embrace ours in blind resignation to an authority that the human understanding does not acknowledge. However often the understanding may err, it can own no other guide but reason, and cannot submit blindly to the will and dictates of another. Suppose the man you would bring over to your views is one who examines before he assents. Then you must allow him to go over the account again at his leisure, recall what has slipped from his mind, and examine all the particulars to see on which side the advantage lies. He

may not think our arguments weighty enough to engage him again in so much trouble. But that is only what we often do ourselves in similar cases, and we would take it badly if others were to dictate to us what points we should study. Now suppose he is one who takes his opinions on trust. Time and custom may have settled his tenets so firmly in his mind that he thinks them self-evident and of unquestionable certainty. Or he may take them to be impressions he has received from God himself, or from men sent by him. How can we imagine that he will renounce them? How can we expect, I say, that opinions settled in this way will be given up to the arguments or authority of a stranger or an adversary? This is especially so if there is any suspicion of self-interest or ulterior design, as there never fails to be when men find themselves ill-treated. We would do well to pity our mutual ignorance and try to remove it by every gentle and fair means of instruction. We should not immediately treat others badly as obstinate and perverse because they will not renounce their own opinions and accept ours, or at least those we would force on them. It is more than probable that we are no less obstinate in not embracing some of theirs. For where is the man who has incontestable evidence of the truth of everything he holds, or of the falsehood of everything he condemns? Or who can say that he has examined his own or other men's opinions to the bottom? In this fleeting state of action and blindness we are in, we must believe without knowledge, often on very slight grounds. That necessity should make us busier and more careful in informing ourselves than in constraining others. At the least, those who have not thoroughly examined all their own tenets to the bottom must admit that they are unfit to dictate to others. They are unreasonable in imposing as truth on other men's belief what they themselves have not looked into. They have not even weighed the arguments of probability on which they should accept or reject it. Some have fairly and truly examined all the doctrines they profess and govern themselves by, and have thereby got beyond doubt in them. They would have a better claim to require others to follow them. But these

are so few in number, and find so little reason to be dogmatic in their opinions, that nothing insolent or domineering is to be expected from them. And there is reason to think that if men were better instructed themselves, they would be less inclined to impose on others.

MATTERS OF FACT AND TESTIMONY

Assent to matters of fact ranges from assurance to doubt, and testimony weakens with each remove.

4.16.5 *Probability concerns either matters of fact or speculation.*—But to return to the grounds of assent and its several degrees. We should note that the propositions we accept on inducements of probability are of two sorts. Some concern a particular existence, or, as it is usually called, matter of fact, which falls under observation and so is capable of human testimony. Others concern things that are beyond the discovery of our senses, and so are not capable of any such testimony.

4.16.6 *The concurring experience of all other men with ours produces assurance approaching knowledge.*—Concerning the first of these, namely, particular matter of fact:

First, a particular thing may be consistent with the constant observation of ourselves and others in similar cases, and come attested by the concurring reports of all who mention it. Then we accept it as easily, and build on it as firmly, as if it were certain knowledge. We reason and act on it with as little doubt as if it were a perfect demonstration. Suppose all Englishmen who had occasion to mention it were to affirm that it froze in England last winter, or that swallows were seen there in the summer. I think a man could hardly doubt it any more than he doubts that seven and four are eleven. The first and highest degree of probability, therefore, is this. The general consent of all men in all ages, as far as it can be known, joins with a man's own constant and never-failing experience in similar cases to confirm the truth of some particular matter of fact attested by fair witnesses. Such are all the settled constitutions and proper-

ties of bodies, and the regular workings of causes and effects in the ordinary course of nature. This we call an argument from the nature of things themselves. For what our own and other men's constant observation has always found to happen in the same way, we reasonably conclude to be the effect of steady and regular causes, even though those causes do not come within the reach of our knowledge. Take these propositions: that fire warmed a man, melted lead, and changed the color or consistency of wood or charcoal; that iron sank in water and floated in mercury. These and similar propositions about particular facts agree with our constant experience whenever we deal with these matters. When others mention them, they generally speak of them as things always found to be so, and so nobody even disputes them. We are therefore put beyond doubt that an account affirming that any such thing has happened, or any prediction that it will happen again in the same way, is quite true. These probabilities rise so close to certainty that they govern our thoughts as absolutely, and influence all our actions as fully, as the most evident demonstration. In what concerns us, we make little or no distinction between them and certain knowledge. Our belief, grounded in this way, rises to assurance.

4.16.7 *Unquestionable testimony and experience for the most part produce confidence.*—Second, the next degree of probability is this. I find, by my own experience and the agreement of all others who mention it, that a thing is for the most part so, and the particular instance of it is attested by many witnesses beyond doubt. For example, history gives us such an account of men in all ages that most men prefer their private advantage to the public good, and my own experience confirms it as far as I have had opportunity to observe. If all the historians who write about Tiberius say that Tiberius did so, it is extremely probable.[3] And in this case our assent has sufficient foundation to rise to a degree we may call confidence.

4.16.8 *Fair testimony, where the nature of the thing is neutral, also produces confident belief.*—Third, some things could happen either

3 Tiberius was Roman emperor from AD 14 to 37.

way: a bird might fly this way or that, or it might thunder on a man's right hand or his left, and so on. When a particular matter of fact of this kind is vouched for by the concurring testimony of unsuspected witnesses, there too our assent is unavoidable. Take these facts: that there is a city in Italy called Rome; that about seventeen hundred years ago a man called Julius Caesar lived in it; that he was a general, and that he won a battle against another called Pompey. In the nature of the thing there is nothing for or against this. Yet since credible historians report it and no writer at all contradicts it, a man cannot help believing it. He can doubt it as little as he doubts the existence and actions of his own acquaintances, to which he himself is a witness.

4.16.9 *When experiences and testimonies clash, the degrees of probability vary infinitely.*—So far the matter is easy enough. Probability on such grounds carries so much evidence with it that it naturally determines the judgment. It leaves us as little freedom to believe or disbelieve as a demonstration leaves us whether to know or be ignorant. The difficulty comes when testimonies contradict common experience, and the reports of history and witnesses clash with the ordinary course of nature, or with one another. That is where diligence, attention, and exactness are needed to form a right judgment, and to proportion our assent to the differing evidence and probability of the thing. The probability rises and falls according as those two foundations of credibility, namely, common observation in similar cases and particular testimonies in that particular instance, favor or contradict it. These are subject to a great variety of contrary observations, circumstances, and reports. The reporters also differ greatly in their qualifications, temperaments, aims, oversights, and so on. So it is impossible to reduce to precise rules the various degrees in which men give their assent. Only this much can be said in general. After due examination and a careful weighing of every particular circumstance, the arguments and proofs pro and con will appear to anyone, on the whole, to preponderate in greater or lesser degree on one side or the other. According as they do, they are fitted to produce in the mind the different

kinds of reception we call belief, conjecture, guess, doubt, wavering, distrust, disbelief, and so on.

4.16.10 *Traditional testimonies: the farther removed, the weaker their proof.*—This is what concerns assent in matters where testimony is used. On this subject I think it may not be amiss to note a rule observed in the law of England. An attested copy of a record is good proof. But a copy of a copy will not be admitted as proof in court, however well attested and however credible the witnesses. This is so generally approved as reasonable, and as suited to the wisdom and caution we should use in our inquiry into important truths, that I have never yet heard of anyone who criticized it. If this practice is acceptable in deciding right and wrong, it carries this observation along with it: the farther any testimony is from the original truth, the less force and proof it has. What I call the original truth is the being and existence of the thing itself. A credible man vouching for his knowledge of it is a good proof. But if another, equally credible, testifies to it from his report, the testimony is weaker. And a third who attests to the hearsay of a hearsay counts for still less. So in truths handed down by tradition, each remove weakens the force of the proof. The more hands the tradition has passed through in succession, the less strength and evidence it receives from them. I thought this necessary to point out because I find that some men commonly practice the very opposite. They regard opinions as gaining force by growing older. A thousand years ago, a rational man living at the same time as the first witness would not have thought a thing at all probable. Yet it is now pressed as certain beyond all question, only because several people since then have repeated it from him, one after another. On this basis some propositions were evidently false, or doubtful enough, at their first beginnings. By an inverted rule of probability they come to pass for authentic truths. Propositions that found or deserved little credit from the mouths of their first authors are thought to grow venerable with age, and are pressed as undeniable.

4.16.11 *Yet history is of great use.*—I would not be thought here to lessen the credit and usefulness of history. In many cases it is all the light we have. From it we receive, with convincing evidence, a great part of the useful truths we possess. I think nothing more valuable than the records of antiquity, and I wish we had more of them, and less corrupted. But this very truth compels me to say that no probability can rise higher than its first source. Something may have no other evidence than the single testimony of one witness. Then it must stand or fall by his testimony alone, whether that testimony is good, bad, or indifferent. Hundreds of others may cite it afterward, one after another, but it is so far from gaining strength by this that it is only the weaker. One man may quote another man's words or meaning wrongly out of passion, interest, carelessness, or a misunderstanding of his meaning. Men's minds are also moved by a thousand odd reasons or whims that are impossible to discover. Anyone who has examined the citations of writers even a little cannot doubt how little credit quotations deserve where the originals are missing. Consequently he cannot doubt how much less quotations of quotations can be relied on. This much is certain: what was affirmed on slight grounds in one age can never become more valid in later ages by being often repeated. On the contrary, the farther it is from the original, the less valid it is. It always has less force in the mouth or writing of the one who last used it than in that of the one from whom he received it.

ANALOGY AND MIRACLES

Where the senses cannot reach, analogy guides probability; miracles and revelation are special cases.

4.16.12 *In things that the senses cannot discover, analogy is the great rule of probability.*—The probabilities we have mentioned so far concern only matters of fact and things capable of observation and testimony. There remains the other sort. Men hold opinions about these things with varying degrees of assent, though the things do not fall within the reach of our senses and so are not

capable of testimony. Such are, 1. The existence, nature, and operations of finite immaterial beings outside us, such as spirits, angels, devils, and so on; or the existence of material beings that our senses cannot detect, either because they are so small in themselves or because they are so remote from us. An example is whether there are any plants, animals, and intelligent inhabitants on the planets and in other dwelling places of the vast universe. 2. The manner of operation in most parts of the works of nature. Here we see the perceptible effects, but their causes are unknown, and we do not perceive the ways and manner in which the effects are produced. We see that animals are generated, nourished, and move. We see that the lodestone draws iron, and that the parts of a candle melt one after another, turn into flame, and give us both light and heat. These and similar effects we see and know. But the causes at work, and the manner in which the effects are produced, we can only guess at and conjecture as probable. These and the like do not come within the scrutiny of human senses, so the senses cannot examine them and nobody can attest to them. Therefore they can appear more or less probable only as they agree more or less with truths established in our minds, and as they fit in with other parts of our knowledge and observation. Analogy is the only help we have in these matters, and from analogy alone we draw all our grounds of probability. Thus we observe that merely rubbing two bodies violently against each other produces heat, and very often fire itself. So we have reason to think that what we call heat and fire consists in a violent agitation of the imperceptible minute parts of the burning matter. We likewise observe that the different refractions of transparent bodies produce in our eyes the different appearances of various colors. We also observe that different arrangements of the surface parts of various bodies, such as velvet and watered silk, do the same. So we think it probable that the color and shine of bodies is in them nothing but the different arrangement and refraction of their minute and imperceptible parts. Thus in all the parts of creation that fall under human observation we find a gradual connection

of one with another, without any great or discernible gaps between them. The great variety of things we see in the world are so closely linked together that it is not easy to discover the boundaries between the several ranks of beings. So we have reason to be persuaded that things ascend upward in degrees of perfection by similarly gentle steps. It is hard to say where the sentient and rational begin, and where the insentient and irrational end. And who is sharp-sighted enough to determine precisely which is the lowest species of living things, and which is the first of those that have no life? As far as we can observe, things decrease and increase as the size does in a regular cone. At points far apart there is a manifest difference in the size of the diameter. But where the upper and lower sections touch each other, the difference between them is hardly discernible. The difference between some men and some animals is exceedingly great. But if we compare the understanding and abilities of some men and some animals, we will find so little difference that it will be hard to say that the man's is either clearer or larger. Observing, I say, such gradual and gentle descents downward in the parts of creation below man, the rule of analogy may make it probable that it is the same in things above us and beyond our observation. There may be several ranks of intelligent beings, surpassing us in various degrees of perfection. They would ascend toward the infinite perfection of the Creator by gentle steps and differences, each of them not far removed from the next. This sort of probability, which is the best guide to rational experiments and the source of hypotheses, also has its use and influence. Cautious reasoning from analogy often leads us to discover truths and useful products that would otherwise remain hidden.

4.16.13 *One case where contrary experience does not lessen testimony.* —Common experience and the ordinary course of things rightly have a great influence on people's minds, making them give or refuse credit to anything proposed for their belief. Yet there is one case in which the strangeness of the fact does not lessen assent to fair testimony about it. Where such supernatural

events suit the ends aimed at by him who has the power to change the course of nature, then, under those circumstances, the further they go beyond or against ordinary observation, the fitter they may be to produce belief. This is exactly the case of miracles. When they are well attested, they not only gain credit themselves but also lend it to other truths that need such confirmation.

4.16.14 *The bare testimony of revelation is the highest certainty.*—Besides those we have mentioned so far, there is one sort of proposition that claims the highest degree of our assent on bare testimony, whether or not the thing proposed agrees with common experience and the ordinary course of things. The reason is that the testimony comes from one who can neither deceive nor be deceived, and that is God himself. This carries with it an assurance beyond doubt, evidence beyond exception. This is called by a special name, revelation, and our assent to it is called faith. Faith settles our minds as absolutely, and shuts out all wavering as completely, as our knowledge itself does. We could as well doubt our own existence as doubt whether a revelation from God is true. So faith is a settled and sure principle of assent and assurance, and leaves no room at all for doubt or hesitation. Only, we must be sure that it is a divine revelation, and that we understand it correctly. Otherwise, if we have faith and assurance in what is not divine revelation, we shall expose ourselves to all the extravagance of enthusiasm and all the error of wrong principles. In those cases, therefore, our assent can rationally be no higher than the evidence that it is a revelation, and that this is the meaning of the words in which it is delivered. If the evidence that it is a revelation, or that this is its true sense, rests only on probable proofs, our assent can reach no higher than a confidence or a doubt, depending on how evident the probability of the proofs is. But I shall say more later about faith, and the precedence it ought to have over other arguments of persuasion, where I treat it as it is ordinarily set against reason—though in truth it is nothing else but an assent founded on the highest reason.

REASON

Reason finds and orders intermediate ideas, and it does so without needing syllogism.

4.17.1 *Various meanings of the word reason.*—The word "reason" has different meanings in English. Sometimes it is taken for true and clear principles; sometimes for clear and fair deductions from those principles; and sometimes for the cause, particularly the final cause. But I shall consider it here in a sense different from all these: as it stands for a faculty in man—the faculty by which man is supposed to be distinguished from beasts, and in which he evidently far surpasses them.

4.17.2 *What reasoning consists in.*—As has been shown, general knowledge consists in a perception of the agreement or disagreement of our own ideas, and knowledge of the existence of all things outside us (except only God, whose existence every man can certainly know and demonstrate to himself from his own existence) is had only by our senses. If so, what room is there for the exercise of any other faculty besides outward sense and inward perception? What need is there of reason? A great deal, both for enlarging our knowledge and for regulating our assent. For reason has to do with both knowledge and opinion. It is necessary to all our other intellectual faculties and assists them all, and indeed it contains two of them, namely sagacity and illation. By the one it finds things out. By the other it so orders the intermediate ideas as to discover what connection there is in each link of the chain by which the extremes are held together, and in this way, as it were, draws into view the truth being sought. This is what we call illation or inference. It consists in nothing but the perception of the connection between the ideas at each step of the deduction. By it the mind comes to see either the certain agreement or disagreement of any two ideas, as in demonstration, where it arrives at knowledge; or their probable connection, on which it gives or withholds its assent, as in opinion. Sense and intuition reach only a very little

way. The greatest part of our knowledge depends on deductions and intermediate ideas. And in those cases where we have to settle for assent instead of knowledge, and take propositions as true without being certain that they are, we need to find out, examine, and compare the grounds of their probability. In both these cases, the faculty that finds out the means and rightly applies them, to discover certainty in the one and probability in the other, is what we call reason. For just as reason perceives the necessary and indubitable connection of all the ideas or proofs with one another at each step of any demonstration that produces knowledge, so it likewise perceives their probable connection with one another at every step of a discourse to which it thinks assent is due. This is the lowest degree of what can truly be called reason. For where the mind does not perceive this probable connection—where it does not discern whether there is any such connection or not—there men's opinions are not the product of judgment or the consequence of reason. They are the effects of chance and hazard, of a mind drifting at random, without choice and without direction.

4.17.3 *Its four parts.*—So we may distinguish these four degrees in reason. The first and highest is discovering and finding out truths. The second is arranging them regularly and methodically, laying them out in a clear and fitting order so that their connection and force can be plainly and easily perceived. The third is perceiving their connection. The fourth is drawing a right conclusion. These several degrees can be observed in any mathematical demonstration. It is one thing to perceive the connection of each part as someone else gives the demonstration; another to perceive how the conclusion depends on all the parts; a third to work out a demonstration clearly and neatly oneself; and something different from all these to have first found out the intermediate ideas or proofs by which it is made.

AGAINST SYLLOGISM

Locke argues that syllogism is not the chief instrument of reason and discovers nothing new.

4.17.4 *Syllogism not the great instrument of reason.*—There is one more thing about reason that I would like to have considered: whether syllogism, as is generally thought, is its proper instrument and the most useful way of exercising this faculty. My reasons for doubting it are these.

First, because syllogism serves our reason in only one of the parts just mentioned, namely, showing the connection of the proofs in any one instance, and no more. And even in this it is of no great use, since the mind can perceive such a connection, where it really exists, just as easily—indeed perhaps better—without it.

If we observe the workings of our own minds, we shall find that we reason best and most clearly when we simply observe the connection of the proof, without reducing our thoughts to any rule of syllogism. And so we may notice that many people who do not know how to make a syllogism reason exceedingly clearly and correctly. Anyone who looks into many parts of Asia and America will find people there who reason perhaps as sharply as he does himself, and yet have never heard of a syllogism and cannot reduce a single argument to those forms. And I believe hardly anyone makes syllogisms when reasoning within himself. It is true that syllogism is sometimes used to expose a fallacy hidden in a rhetorical flourish or cunningly wrapped up in a smooth sentence, and, by stripping an absurdity of its cover of wit and fine language, to show it in its naked ugliness. But by the artificial form it puts such loose discourse into, it shows the weakness or fallacy only to those who have thoroughly studied mode and figure. They must have examined the many ways three propositions can be put together closely enough to know which of them certainly conclude correctly and which do not,

and on what grounds they do so.[4] I grant that all who have considered syllogism far enough to see why, when three propositions are laid together in one form, the conclusion will certainly be right, but in another not certainly so, are certain of the conclusions they draw from the premises in the allowed modes and figures. But those who have not looked that far into these forms are not sure, by virtue of syllogism, that the conclusion certainly follows from the premises. They only take it to be so through an implicit faith in their teachers and a confidence in those forms of argument. And this is still only believing, not being certain. Now of all mankind, those who can make syllogisms are extremely few compared with those who cannot. And of the few who have been taught logic, only a very small number do anything more than believe that syllogisms in the allowed modes and figures conclude correctly, without knowing for certain that they do. So if syllogisms must be taken as the only proper instrument of reason and means of knowledge, it will follow that before Aristotle there was not one man who did or could know anything by reason, and that since the invention of syllogisms, not one in ten thousand does.[5]

But God has not been so sparing to men as to make them merely two-legged creatures and leave it to Aristotle to make them rational—that is, those few of them whom he could get to examine the grounds of syllogisms closely enough to see two things. They had to see that, of the more than sixty ways in which three propositions can be laid together, there are only about fourteen in which one can be sure the conclusion is right. And they had to see on what grounds the conclusion is certain in these few and not in the others. God has been more generous to mankind than that. He has given them a mind that can reason without being instructed in methods of syllogizing. The understanding is not taught to reason by these rules. It has a native faculty to perceive the coherence or incoherence of its ideas,

4 Mode (or mood) and figure are the technical classifications of syllogisms in scholastic logic.

5 Aristotle first set out the theory of the syllogism, in the *Prior Analytics*.

and can arrange them correctly without any such confusing repetitions. I do not say this in any way to belittle Aristotle. I regard him as one of the greatest men of antiquity, whose broad views, acuteness and penetration of thought, and strength of judgment few have equaled. And in this very invention of forms of argument, in which the conclusion can be shown to be rightly inferred, he did great service against those who were not ashamed to deny anything. And I readily admit that all right reasoning can be reduced to his forms of syllogism. Still, without detracting from him, I think I can truly say that they are neither the only nor the best way of reasoning for leading into truth those who are willing to find it and want to make the best use they can of their reason for the attainment of knowledge. And he himself, it is plain, found out that some forms are conclusive and others not, not by the forms themselves but by the original way of knowledge, that is, by the visible agreement of ideas. Tell a country gentlewoman that the wind is southwest and the sky dark and threatening rain, and she will easily understand that it is not safe for her to go out lightly dressed on such a day after a fever. She clearly sees the probable connection of all these, namely southwest wind, clouds, rain, getting wet, catching cold, relapse, and danger of death. She does so without tying them together in the artificial and cumbersome fetters of several syllogisms, which clog and hinder the mind; it moves from one part to the next faster and more clearly without them. And the probability she easily perceives in things in this natural state would be quite lost if the argument were handled learnedly and set out in mode and figure. For this very often confuses the connection. And I think everyone will find, in mathematical demonstrations, that the knowledge gained by them comes most quickly and clearly without syllogisms.

Inference is regarded as the great act of the rational faculty, and so it is when it is rightly made. But the mind, being either very eager to enlarge its knowledge or very inclined to favor the opinions it has once absorbed, is very quick to make inferences.

It therefore often makes them too hastily, before it perceives the connection of the ideas that must hold the extremes together.

To infer is nothing but to draw in one proposition as true by virtue of another laid down as true; that is, to see or suppose such a connection between the two ideas of the inferred proposition. For example, let this be the proposition laid down: "Men shall be punished in another world"; and from it let this other be inferred: "Then men can determine themselves." The question now is whether the mind has made this inference correctly or not. If it has made it by finding out the intermediate ideas and taking a view of their connection, placed in due order, it has proceeded rationally and made a right inference. If it has done so without such a view, it has not so much made an inference that will hold, or an inference of right reason, as shown a willingness that it should be one, or be taken for one. But in neither case was it syllogism that discovered those ideas or showed their connection. They must be found out, and their connection perceived at every point, before they can rationally be used in a syllogism. Otherwise it would have to be said that any idea, without considering what connection it has with the other two whose agreement it is supposed to show, will do well enough in a syllogism, and can be picked at random as the *medius terminus* (middle term) to prove any conclusion at all. But nobody will say this, because it is by virtue of the perceived agreement of the intermediate idea with the extremes that the extremes are concluded to agree. So each intermediate idea must be such that, in the whole chain, it has a visible connection with the two it has been placed between; otherwise the conclusion cannot be inferred or drawn in by it. For wherever any link of the chain is loose and unconnected, the whole strength of the chain is lost, and it has no force to infer or draw in anything. In the example above, what shows the force of the inference, and consequently its reasonableness, but a view of the connection of all the intermediate ideas that draw in the conclusion, or proposition inferred? For example: men shall be punished———God the punisher———just punishment———the punished guilty———could

have done otherwise———freedom———self-determination. By this chain of ideas visibly linked together in sequence—that is, with each intermediate idea agreeing on either side with the two it is immediately placed between—the ideas of men and self-determination are seen to be connected. That is, this proposition, "men can determine themselves," is drawn in, or inferred, from this one: that they shall be punished in the other world. For here the mind sees the connection between the idea of men's punishment in the other world and the idea of God's punishing; between God's punishing and the justice of the punishment; between the justice of the punishment and guilt; between guilt and the power to do otherwise; between a power to do otherwise and freedom; and between freedom and self-determination. Seeing these, it sees the connection between men and self-determination.

Now I ask whether the connection of the extremes is not more clearly seen in this simple and natural arrangement than in the confusing repetitions and jumble of five or six syllogisms. I must beg pardon for calling it a jumble, until somebody puts these ideas into that many syllogisms and then says that they are less jumbled, and their connection more visible, when they are transposed, repeated, and spun out to greater length in artificial forms. I mean less jumbled than in the short, natural, plain order in which they are laid down here, in which everyone can see the connection, and in which they must be seen before they can be put into a train of syllogisms. For the natural order of the connecting ideas must direct the order of the syllogisms. A man must see the connection of each intermediate idea with those it connects before he can reasonably use it in a syllogism. And when all those syllogisms have been made, neither logicians nor non-logicians will see the force of the argument—that is, the connection of the extremes—one bit better. [For those who are not trained in the art do not know the true forms of syllogism or the reasons for them. So they cannot know whether the syllogisms are made in correct and conclusive modes and figures or not, and are not helped at all by the forms they are put

into. Indeed, since those forms disturb the natural order in which the mind could judge of the connections, they make the inference much more uncertain than it would be without them.] As for the logicians themselves, they see the connection of each intermediate idea with those it stands between (on which the force of the inference depends) just as well before the syllogism is made as after—or else they do not see it at all. For a syllogism neither shows nor strengthens the connection of any two ideas immediately put together. It only shows, by the connection seen in them, what connection the extremes have with one another. But what connection the intermediate idea has with either of the extremes in that syllogism, no syllogism does or can show. That, the mind alone does or can perceive, as the ideas stand there side by side, solely by its own view. The syllogistic form they happen to be in gives it no help or light at all. The form only shows that if the intermediate idea agrees with the ideas it is immediately applied to on both sides, then those two remote ones—the extremes, as they are called—certainly agree. And therefore the immediate connection of each idea with the one it is applied to on either side, on which the force of the reasoning depends, is seen just as well before the syllogism is made as after. Otherwise the person who makes the syllogism could never see it at all. This, as has already been observed, is seen only by the eye, or perceptive faculty, of the mind, taking a view of the ideas laid together side by side. And the mind has this view of any two ideas equally whenever they are laid together in any proposition, whether or not that proposition is placed as a major or a minor premise in a syllogism.

Of what use, then, are syllogisms? I answer: their chief and main use is in the schools, where men are allowed without shame to deny the agreement of ideas that plainly agree. Or, outside the schools, their use is with those who have learned there to deny without shame the connection of ideas that is visible even to themselves. But a thoughtful seeker after truth, whose only aim is to find it, has no need of any such form to compel him to accept the inference. Its truth and reasonableness are

better seen by arranging the ideas in a simple and plain order. That is why men, in their own inquiries after truth, never use syllogisms to convince themselves [or, in teaching others, to instruct willing learners]. For before they can put ideas into a syllogism, they must see the connection between the intermediate idea and the two other ideas it is set between and applied to, in order to show their agreement. And when they see that, they see whether the inference is good or not, so syllogism comes too late to settle it. To use the earlier example again, I ask this. The mind considers the idea of justice, placed as an intermediate idea between the punishment of men and the guilt of the punished (and until it considers it in this way, the mind cannot use it as a *medius terminus*). Does it not then see the force and strength of the inference just as plainly as when it is formed into a syllogism? To show it with a very plain and easy example, let *animal* be the intermediate idea, or *medius terminus*, that the mind uses to show the connection of *homo* (man) and *vivens* (living). I ask whether the mind does not see that connection more readily and plainly in the simple and proper position of the connecting idea in the middle, thus:

Homo———Animal———Vivens.

than in this confusing one:

Animal———Vivens———Homo———Animal:

which is the position these ideas have in a syllogism, to show the connection between *homo* and *vivens* through the intervention of *animal*.

It is true that syllogism is thought to be of necessary use even to lovers of truth, to show them the fallacies that are often concealed in florid, witty, or convoluted discourse. But that this is a mistake will appear if we consider why men who sincerely aim at truth are sometimes taken in by such loose—or, as they are called, rhetorical—discourses. It is because their imagination is struck by some lively metaphorical images, so that they neglect to notice, or do not easily perceive, what the true ideas are on which the inference depends. Now to show such men the weakness of such an argument, nothing more is needed than to strip

it of the superfluous ideas. Blended and confused with those on which the inference depends, these seem to show a connection where there is none, or at least hinder the discovery that there is none. Then one need only lay the bare ideas on which the force of the argument depends in their proper order. In that position the mind, taking a view of them, sees what connection they have, and so is able to judge the inference without any need of a syllogism at all.

I grant that mode and figure are commonly used in such cases, as if the detection of the incoherence of such loose discourse were owed entirely to the syllogistic form. I myself once thought so too. But on a stricter examination I now find that laying out the intermediate ideas bare in their proper order shows the incoherence of the argument better than syllogism does. It does so not only because it subjects each link of the chain to the mind's immediate view in its proper place, where its connection is best observed; but also because syllogism shows the incoherence only to those (not one in ten thousand) who perfectly understand mode and figure and the reasoning on which those forms are established. A proper and orderly placing of the ideas on which the inference is made, by contrast, lets everyone see the lack of connection in the argument and the absurdity of the inference—logician or not—provided he understands the terms and has the faculty of perceiving the agreement or disagreement of such ideas. (Without that faculty he cannot perceive the strength or weakness, coherence or incoherence, of the discourse, in syllogism or out of it.)

In this way I have known a man unskilled in syllogism who, on first hearing, could perceive the weakness and inconclusiveness of a long, artful, and plausible discourse by which others more skilled in syllogism had been misled. And I believe few of my readers do not know such people. Indeed, if it were not so, the debates of most princes' councils and the business of assemblies would be in danger of being mismanaged. For those who are relied on in them, and usually have a great say, are not always people who have had the good luck to be thoroughly

versed in the forms of syllogism or expert in mode and figure. And if syllogism were the only way, or even just the surest way, to detect the fallacies of artful discourse, I do not think that all mankind—even princes, in matters concerning their crowns and dignities—are so much in love with falsehood and error that they would everywhere have neglected to bring syllogism into debates of importance, or thought it ridiculous even to offer syllogisms in affairs of consequence. This is plain evidence to me that men of ability and insight, who were not idly disputing at their leisure but had to act on the outcome of their debates, and who often paid for their mistakes with their heads or their fortunes, found those scholastic forms of little use for discovering truth or fallacy. Both the one and the other could be shown, and better shown, without them to those who would not refuse to see what was plainly shown them.

Secondly, another reason makes me doubt whether syllogism is the only proper instrument of reason in discovering truth. Whatever use mode and figure are claimed to have in laying open fallacy (which has been considered above), those scholastic forms of discourse are no less liable to fallacies than plainer ways of argument. For this I appeal to common observation, which has always found these artificial methods of reasoning better suited to catch and entangle the mind than to instruct and inform the understanding. That is why men, even when they are baffled and silenced in this scholastic way, are seldom or never convinced and so brought over to the winning side. They may acknowledge their opponent to be the more skillful debater, but they remain persuaded nonetheless that the truth is on their side. And they go away, beaten as they are, with the same opinion they came with. They could not do this if this way of arguing carried light and conviction with it and made men see where the truth lay. And so syllogism has been thought better suited to winning victory in dispute than to discovering or confirming truth in fair inquiry. And if it is certain that fallacies can be couched in syllogisms—as cannot be denied—it must be something else, and not syllogism, that discovers them.

I know from experience how quick some people are, when not all the use they have been accustomed to attribute to something is granted, to cry out that I want to throw it out altogether. But to head off such unjust and groundless charges, I tell them that I am not for taking away any aids to the understanding in the attainment of knowledge. And if men skilled in syllogisms and used to them find them helpful to their reason in discovering truth, I think they should use them. All I aim at is that they should not attribute more to those forms than belongs to them, or think that men have no use, or not so full a use, of their reasoning faculty without them. Some eyes need spectacles to see things clearly and distinctly; but let those who use them not therefore say that nobody can see clearly without them. Those who do so will be thought to run down and discredit nature a little too much in favor of art (to which they are perhaps indebted). Reason, by its own penetration, where it is strong and well exercised, usually sees faster and more clearly without syllogism. If the use of those spectacles has so dimmed its sight that it cannot see without them what does or does not follow in an argument, I am not so unreasonable as to be against using them. Everyone knows what best suits his own sight. But let him not conclude from this that all those are in the dark who do not use exactly the same aids he finds he needs.

4.17.5 *Helps little in demonstration, less in probability.*—But however it may be in knowledge, I think I can truly say that syllogism is of far less use, or none at all, in probabilities. For there assent must be determined by the preponderance of evidence, after all the proofs have been duly weighed, with all the circumstances on both sides; and nothing is so unfit to help the mind in that as syllogism. It runs off with one assumed probability, or one topical argument, and pursues it until it has led the mind quite out of sight of the matter under consideration. Then, forcing the mind onto some remote difficulty, it holds it fast there—entangled, perhaps, and as it were manacled in the chain of syllogisms. It does not allow the mind the freedom, much less give

it the aids, needed to show on which side, all things considered, the greater probability lies.

4.17.6 *It serves not to increase our knowledge, but to fence with it.*— But suppose, as may perhaps be said, that it helps us convince men of their errors and mistakes (and yet I would like to see the man who was forced out of his opinion by dint of syllogism). Even so, it fails our reason in the part that is, if not its highest perfection, certainly its hardest task and the one in which we most need its help: finding out proofs and making new discoveries. The rules of syllogism do not supply the mind with the intermediate ideas that may show the connection of remote ones. This way of reasoning discovers no new proofs; it is the art of marshaling and arranging the old ones we already have. The forty-seventh proposition of the first book of Euclid is quite true, but its discovery was not, I think, owed to any rules of ordinary logic. A man first knows, and then he is able to prove syllogistically. So syllogism comes after knowledge, and by then a man has little or no need of it. But it is chiefly by finding out the ideas that show the connection of distant ones that our stock of knowledge is increased and useful arts and sciences are advanced.[6] Syllogism at best is only the art of fencing with the little knowledge we have, without adding anything to it. And if a man employed his reason entirely in this way, he would be doing much the same as someone who got some iron out of the bowels of the earth and had it all beaten into swords and put into his servants' hands, for them to fence with and bang one another. Had the king of Spain used his people's hands and his Spanish iron that way, he would have brought to light very little of the treasure that lay hidden so long in the depths of America.[7] And I am inclined to think that anyone who uses all the force of his reason only in brandishing syllogisms will discover very little of that mass of knowledge that still lies hidden in the secret recesses of nature. That knowledge, I am inclined to think, is more likely to be opened up and added to the common stock of

6 Euclid, *Elements* 1.47, is the Pythagorean theorem.

7 Locke alludes to the Spanish Crown's gold and silver mining in the Americas.

mankind by native, unpolished reason (as has happened before) than by any scholastic procedure following the strict rules of mode and figure.

4.17.7 *Other helps should be sought.*—Nevertheless, I do not doubt that ways can be found to assist our reason in this most useful part. The judicious Hooker encourages me to say so. In his *Ecclesiastical Polity*, book 1,[8] section 6, he says this: "If there might be added the right helps of true art and learning (which helps, I must plainly confess, this age of the world, carrying the name of a learned age, neither much knows nor generally regards), there would undoubtedly be almost as much difference in maturity of judgment between men trained in them and men as they now are, as there is between men as they now are and people with severe intellectual disabilities." I do not claim to have found or discovered here any of those right helps of art that this great and deep-thinking man mentions. But this much is plain: syllogism and the logic now in use, which were just as well known in his day, cannot be any of the helps he means. It is enough for me if, by a discussion perhaps somewhat out of the ordinary—certainly, as far as I am concerned, wholly new and not borrowed—I have given others occasion to look about for new discoveries and to seek in their own thoughts for those right helps of art. I fear these will hardly be found by those who slavishly confine themselves to the rules and dictates of others. For beaten tracks lead this sort of cattle (as an observant Roman calls them), whose thoughts reach only to imitation, *non quo eundum est, sed quo itur*—"not where one ought to go, but where people are going."[9] But I can venture to say that this age is graced with some men of such strength of judgment and breadth of understanding that, if they turned their thoughts to this subject, they could open new and undiscovered ways to the advancement of knowledge.

4.17.8 *We reason about particulars.*—Having had occasion here to speak of syllogism in general and its use in reasoning and in

8 Richard Hooker (1554–1600), author of *Of the Laws of Ecclesiastical Polity*.
9 Seneca, *On the Happy Life* 1.

improving our knowledge, it is fitting, before I leave the subject, to point out one obvious mistake in the rules of syllogism: namely, that no syllogistic reasoning can be right and conclusive unless it has at least one general proposition in it. As if we could not reason, and have knowledge, about particulars! Whereas in truth, rightly considered, the immediate object of all our reasoning and knowledge is nothing but particulars. Every man's reasoning and knowledge is only about the ideas existing in his own mind, which are truly, every one of them, particular existences. Our knowledge and reasoning about other things extend only so far as those things correspond with our particular ideas. So the perception of the agreement or disagreement of our particular ideas is the whole and utmost extent of all our knowledge. Universality is only incidental to it, and consists merely in this: the particular ideas it concerns are such that more than one particular thing can correspond with them and be represented by them. But the perception of the agreement or disagreement of any two ideas, and consequently our own knowledge, is equally clear and certain whether either, both, or neither of those ideas is capable of representing more than one real being. One more thing I ask leave to offer about syllogism before I leave it, namely: may one not justly ask whether the form syllogism now has is the form it ought in reason to have? For the *medius terminus* is meant to join the extremes; that is, the intermediate idea is meant, by its intervention, to show the agreement or disagreement of the two in question. Would not the position of the *medius terminus* then be more natural, and show the agreement or disagreement of the extremes more clearly and better, if it were placed in the middle between them? This could easily be done by transposing the propositions and making the *medius terminus* the predicate of the first and the subject of the second, thus:

"Every man is an animal; every animal is a living thing; therefore every man is a living thing."

"Every body is extended and solid; nothing extended and solid is pure extension; therefore body is not pure extension."

I need not trouble my reader with examples of syllogisms whose conclusions are particular. The same reasoning holds for the same form in them as in the general ones.

WHERE REASON FAILS

Reason fails for lack of ideas, obscurity, missing proofs, false principles, and doubtful words.

4.17.9 1. *Reason fails us for lack of ideas.*—Reason penetrates into the depths of the sea and the earth, raises our thoughts almost as high as the stars, and leads us through the vast spaces and broad rooms of this mighty structure. Yet it falls far short of the real extent even of corporeal being, and there are many cases in which it fails us. For instance:

First, it fails us completely where our ideas fail. It does not and cannot reach any farther than they do. So wherever we have no ideas, our reasoning stops, and we are at the end of our reckoning. And if we ever reason about words that do not stand for any ideas, our reasoning is only about those sounds and nothing else.

4.17.10 2. *Because of obscure and imperfect ideas.*—Secondly, our reason is often puzzled and at a loss because of the obscurity, confusion, or imperfection of the ideas it works with, and there we get tangled in difficulties and contradictions. Thus, since we have no perfect idea of the smallest extension of matter, or of infinity, we are at a loss about the divisibility of matter. But since we have perfect, clear, and distinct ideas of number, our reason meets none of those inextricable difficulties in numbers, and never finds itself caught in contradictions about them. In the same way, because we have only imperfect ideas of the operations of our minds, and of the beginning of motion or thought—how the mind produces either of them in us—and still more imperfect ideas of the operation of God, we run into great difficulties about free created agents, from which reason cannot easily extricate itself.

4.17.11 3. *For lack of intermediate ideas.*—Thirdly, our reason is often at a standstill because it does not perceive the ideas that could serve to show the certain or probable agreement or disagreement of two other ideas; and in this some people's faculties far surpass others'. Until algebra—that great instrument and example of human ingenuity—was discovered, people looked with amazement at several of the demonstrations of the ancient mathematicians, and could hardly help thinking that finding some of those proofs was something more than human.

4.17.12 4. *Because of wrong principles.*—Fourthly, the mind, by proceeding on false principles, often gets entangled in absurdities and difficulties, driven into tight corners and contradictions, without knowing how to free itself. In that case it is useless to call on reason for help, except to discover the falsehood of those wrong principles and throw off their influence. Reason is so far from clearing up the difficulties that building on false foundations brings a man into that, if he keeps following it, it entangles him all the more and draws him deeper into perplexity.

4.17.13 5. *Because of doubtful terms.*—Fifthly, just as obscure and imperfect ideas often entangle our reason, so, on the same grounds, dubious words and uncertain signs, when not carefully watched in discussions and arguments, often puzzle people's reason and bring them to a dead end. But these last two are our fault, not the fault of reason. Still, their consequences are plain enough, and the perplexities and errors they fill people's minds with can be seen everywhere.

4.17.14 *Our highest degree of knowledge is intuitive, without reasoning.*—Some of the ideas in the mind are there in such a way that they can be compared directly with one another by themselves; and in these the mind can perceive that they agree or disagree as clearly as it perceives that it has them. Thus the mind perceives that an arc of a circle is less than the whole circle as clearly as it perceives the idea of a circle. This, as I have said, I call intuitive knowledge. It is certain beyond all doubt, needs no proof and cannot have any, and it is the highest of all human certainty. This is what makes all those maxims evident which

nobody doubts, but which everyone (does not merely assent to, as people say, but) knows to be true as soon as they are put to his understanding. In discovering and assenting to these truths there is no use of the discursive faculty, no need of reasoning: they are known by a superior and higher degree of evidence. And if I may guess at things unknown, I am inclined to think that this is the kind of knowledge that angels have now, and that the spirits of just men made perfect will have in a future state, of thousands of things that now either escape our grasp entirely, or that our short-sighted reason has caught some faint glimpse of and we grope after in the dark.[10]

4.17.15 *The next is demonstration by reasoning.*—But though we have a little of this clear light here and there, some sparks of bright knowledge, most of our ideas are such that we cannot discern their agreement or disagreement by comparing them directly. In all these we need reasoning, and must make our discoveries by discourse and inference. Now there are two sorts of these, which I will take the liberty of mentioning here again.

First, there are those whose agreement or disagreement, though it cannot be seen by putting them directly together, can still be examined through the intervention of other ideas that can be compared with them. In this case, when the agreement or disagreement of the intermediate idea with each of the two we want to compare is plainly discerned, it amounts to a demonstration, which produces knowledge. That knowledge is certain, but it is not as easy, or altogether as clear, as intuitive knowledge. For in intuitive knowledge there is just one simple intuition, which leaves no room for the least mistake or doubt: the truth is seen perfectly, all at once. In demonstration, it is true, there is intuition too, but not all at once. When we compare the medium, or intermediate idea, with the second idea, we must remember the intuition of its agreement with the idea we compared it with before; and where there are many mediums, the danger of mistake is greater. For each agreement or disagreement of the ideas must be observed and seen at every step of the

10 "The spirits of just men made perfect" is from Hebrews 12:23.

whole chain, and kept in memory exactly as it is; and the mind must be sure that no part of what is needed to make up the demonstration has been omitted or overlooked. This makes some demonstrations long and complicated, and too hard for those who lack the mental strength to perceive distinctly, and carry accurately and in order in their heads, so many particulars. Even those who can master such intricate speculations sometimes have to go over them again, and need more than one review before they can reach certainty. Still, where the mind clearly retains the intuition it had of the agreement of one idea with another, and of that with a third, and of that with a fourth, and so on, the agreement of the first and the fourth is a demonstration and produces certain knowledge. This may be called rational knowledge, as the other is called intuitive.

4.17.16 *To supply the narrowness of this, we have nothing but judgment based on probable reasoning.*—Secondly, there are other ideas whose agreement or disagreement can be judged only through the intervention of others that have, not a certain agreement with the extremes, but a usual or likely one. It is in these that judgment is properly exercised. Judgment is the mind's settling on the view that certain ideas agree, by comparing them with such probable mediums. This never amounts to knowledge—not even to its lowest degree. Yet sometimes the intermediate ideas tie the extremes together so firmly, and the probability is so clear and strong, that assent follows it as necessarily as knowledge follows demonstration. The great excellence and use of judgment is to observe correctly and make a true estimate of the force and weight of each probability, and then, adding them all up correctly, to choose the side that outweighs the other.

4.17.17 *Intuition, demonstration, judgment.*—Intuitive knowledge is the perception of the certain agreement or disagreement of two ideas compared directly with each other.

Rational knowledge is the perception of the certain agreement or disagreement of any two ideas through the intervention of one or more other ideas.

Judgment is thinking or taking two ideas to agree or disagree through the intervention of one or more ideas whose certain agreement or disagreement with them the mind does not perceive, but has observed to be frequent and usual.

4.17.18 *Consequences of words, and consequences of ideas.*—Although deducing one proposition from another, or making inferences in words, is a large part of reason, and what it is usually occupied with, the principal act of reasoning is finding the agreement or disagreement of two ideas with each other through the intervention of a third. In the same way a man uses a yardstick to find that two houses are the same length, when they could not be brought together to measure their equality by setting them side by side. Words have their consequences as the signs of such ideas; and things agree or disagree as they really are; but we observe this only through our ideas.

FOUR SORTS OF ARGUMENT

Locke names arguments ad verecundiam, ad ignorantiam, ad hominem, and ad judicium.

4.17.19 *Four sorts of arguments.*—Before we leave this subject, it may be worth reflecting a little on four sorts of arguments that people ordinarily use in reasoning with others, to win their assent, or at least to overawe them into silencing their opposition.

1. *Ad verecundiam.*—The first is to cite the opinions of men whose abilities, learning, eminence, power, or some other cause has won them a name and established their reputation in the general esteem with a kind of authority. When men are established in any kind of dignity, it is thought a breach of modesty for others to detract from it in any way, and to question the authority of those who hold it.[11] A man is apt to be censured as too proud when he does not readily yield to the verdict of

11 Locke coined the labels ad verecundiam ("to modesty" or "respect"), ad ignorantiam ("to ignorance"), and ad judicium ("to judgment"); ad hominem ("to the man") was already in use.

approved authors, which others usually receive with respect and submission. It is regarded as insolence for a man to set up and stick to his own opinion against the prevailing stream of antiquity, or to weigh it against that of some learned doctor or otherwise approved writer. Whoever backs his tenets with such authorities thinks that this ought to win him the case, and is ready to call it impudence in anyone who holds out against them. This, I think, may be called *argumentum ad verecundiam*.

4.17.20 2. *Ad ignorantiam.*—Secondly, another way people commonly use to drive others, and force them to submit to their judgments and accept the opinion under debate, is to require the opponent either to admit what they offer as a proof or to come up with a better one. This I call *argumentum ad ignorantiam*.

4.17.21 3. *Ad hominem.*—Thirdly, a third way is to press a man with consequences drawn from his own principles or concessions. This is already known by the name *argumentum ad hominem*.

4.17.22 4. *Ad judicium.*—Fourthly, the fourth is using proofs drawn from any of the foundations of knowledge or probability. This I call *argumentum ad judicium*. This alone of the four brings real instruction with it and advances us on our way to knowledge. For: 1. It does not show that another man's opinions are right because I, out of respect or any consideration other than conviction, will not contradict him. 2. It does not prove that another man is on the right path, or that I ought to take the same one, because I do not know a better. 3. Nor does it follow that another man is on the right path because he has shown me that I am on the wrong one. I may be modest, and therefore not oppose another man's belief; I may be ignorant, and unable to produce a better one; I may be in error, and another may show me that I am. This may perhaps dispose me to receive the truth, but it does not help me to it. That must come from proofs and arguments, and from light arising from the nature of things themselves—not from my bashfulness, ignorance, or error.

4.17.23 *Above, contrary, and according to reason.*—From what has been said about reason, we may be able to make some guess at the distinction of things into those that are according to reason, above reason, and contrary to reason. 1. According to reason are those propositions whose truth we can discover by examining and tracing the ideas we have from sensation and reflection, and which we find by natural deduction to be true or probable. 2. Above reason are those propositions whose truth or probability we cannot derive by reason from those principles. 3. Contrary to reason are those propositions that are inconsistent with, or irreconcilable with, our clear and distinct ideas. Thus the existence of one God is according to reason; the existence of more than one God, contrary to reason; the resurrection of the dead, above reason. Further, "above reason" may be taken in two senses: either as meaning above probability, or as meaning above certainty. And I suppose "contrary to reason" is sometimes taken in that broad sense too.

4.17.24 *Reason and faith not opposite.*—There is another use of the word "reason," in which it is opposed to faith. In itself this is a very improper way of speaking, but common usage has so authorized it that it would be foolish either to oppose it or to hope to remedy it. I only think it worth noting that, however faith is opposed to reason, faith is nothing but a firm assent of the mind. And if that assent is regulated, as it is our duty to regulate it, it cannot be given to anything except on good reason, and so cannot be opposed to reason. He who believes without having any reason for believing may be in love with his own fancies; but he neither seeks truth as he ought, nor pays the obedience due to his Maker, who wants him to use the discerning faculties he has given him to keep him out of mistake and error. He who does not do this to the best of his power, even if he sometimes hits on the truth, is right only by chance; and I do not know whether the luck of the accident will excuse the irregularity of his procedure. This at least is certain: he must answer for whatever mistakes he falls into. Whereas he who makes use of the light and faculties God has given him, and sincerely seeks to

discover truth with the aids and abilities he has, may have this satisfaction in doing his duty as a rational creature: that even if he misses the truth, he will not miss the reward of it. For he governs his assent rightly, and places it as he should, who in any case or matter whatever believes or disbelieves as reason directs him. He who does otherwise transgresses against his own light, and misuses faculties that were given him for no other purpose than to search out and follow the clearer evidence and the greater probability. But since some people set reason and faith against each other, we will consider them in that way in the following chapter.

FAITH AND REASON

Faith is assent to revelation, but no supposed revelation can overrule clear knowledge.

4.18.1 *Necessary to know their boundaries.*—It has been shown above: 1. That we are necessarily ignorant, and lack knowledge of every sort, where we lack ideas. 2. That we are ignorant, and lack rational knowledge, where we lack proofs. 3. That we lack general knowledge and certainty to the extent that we lack clear and determinate specific ideas. 4. That we lack probability to direct our assent in matters where we have neither knowledge of our own nor the testimony of other people on which to ground our reason.

With these things established, I think we may proceed to lay down the measures and boundaries between faith and reason. The lack of these may have been the cause, if not of great disorders, then at least of great disputes, and perhaps of mistakes, in the world. For until it is settled how far we are to be guided by reason and how far by faith, we will argue and try to convince one another in matters of religion in vain.

4.18.2 *What faith and reason are, as distinguished from each other.*—I find that every sect gladly makes use of reason as far as it will help them; and where it fails them, they cry out, "It is a matter of faith, and above reason." And I do not see how they can argue

with anyone, or ever convince an opponent who uses the same plea, without setting down strict boundaries between faith and reason. That ought to be the first point settled in every question where faith has any part.

Reason, then, as distinguished here from faith, I take to be the discovery of the certainty or probability of those propositions or truths that the mind arrives at by deduction from ideas it has acquired by the use of its natural faculties, namely by sensation or reflection.

Faith, on the other hand, is assent to a proposition that has not been made out in this way by the deductions of reason, but is accepted on the credit of the one who proposes it, as coming from God in some extraordinary way of communication. This way of discovering truths to people we call revelation.

4.18.3 *No new simple idea can be conveyed by traditional revelation.* —First, then, I say that no man inspired by God can, by any revelation, communicate to others any new simple ideas that they did not have before from sensation or reflection. For whatever impressions he himself may receive directly from the hand of God, this revelation, if it consists of new simple ideas, cannot be passed on to another either by words or by any other signs. Words, by their direct operation on us, cause no ideas except those of their natural sounds. It is by the custom of using them as signs that they arouse and revive latent ideas in our minds—but only ideas that were there before. For words seen or heard call to mind only those ideas of which they have been accustomed to be signs to us; they cannot introduce any entirely new and previously unknown simple ideas. The same holds for all other signs: they cannot signify to us things of which we have never had any idea at all.

Thus, whatever things were revealed to St. Paul when he was caught up into the third heaven, whatever new ideas his mind received there, the only description he can give others of that place is this: that there are such things "as eye has not seen, nor ear heard, neither has it entered into the heart of man to conceive." And suppose God were to reveal supernaturally to

someone a species of creatures living on, say, Jupiter or Saturn (for no one can deny that there may possibly be such creatures) that had six senses,[12] and were to imprint on his mind the ideas conveyed to theirs by that sixth sense. He could no more produce in other people's minds, by words, the ideas imprinted by that sixth sense than one of us could convey the idea of any color, by the sounds of words, to a man who had the other four senses perfect but had always been entirely without the fifth, sight. For our simple ideas, then—which are the foundation and sole material of all our notions and knowledge—we must depend wholly on our reason, I mean our natural faculties. We can in no way receive them, or any of them, from traditional revelation. I say traditional revelation, as distinguished from original revelation. By original revelation I mean the first impression made directly by God on the mind of any man, to which we cannot set any limits; by traditional revelation, those impressions passed on to others in words and in the ordinary ways by which we convey our conceptions to one another.

4.18.4 *Traditional revelation may make us know propositions knowable also by reason, but not with the same certainty that reason does.* —Secondly, I say that the same truths that are discoverable to us by reason, and by the ideas we can naturally have, may also be discovered and handed down by revelation. So God might reveal the truth of any proposition in Euclid, just as people, by the natural use of their faculties, come to discover it themselves. In all things of this kind there is little need or use for revelation, since God has supplied us with natural and surer means of arriving at the knowledge of them. For whatever truth we come to discover clearly from the knowledge and contemplation of our own ideas will always be more certain to us than truths conveyed to us by traditional revelation. The knowledge we have that this revelation came from God in the first place can never be as sure as the knowledge we have from the clear and distinct perception of the agreement or disagreement of our own ideas. For example, if it

12 Paul's rapture into the third heaven is in 2 Corinthians 12:2–4; the words quoted are from 1 Corinthians 2:9.

had been revealed some ages ago that the three angles of a triangle are equal to two right angles, I might assent to the truth of that proposition on the credit of the tradition that it was revealed; but that would never amount to as great a certainty as knowing it by comparing and measuring my own ideas of two right angles and of the three angles of a triangle. The same holds in matters of fact knowable by our senses. For example, the history of the Flood is conveyed to us by writings that originated in revelation; and yet nobody, I think, will say he has as certain and clear a knowledge of the Flood as Noah, who saw it, or as he himself would have had if he had been alive then and seen it. For he has no greater assurance than that of his senses that it is written in the book supposed to have been written by Moses under inspiration; but he does not have as great an assurance that Moses wrote that book as he would if he had seen Moses write it. So the assurance that it is a revelation is less still than the assurance of his senses.

4.18.5 *Revelation cannot be admitted against the clear evidence of reason.*—In propositions, then, whose certainty is built on the clear perception of the agreement or disagreement of our ideas —attained either by direct intuition, as in self-evident propositions, or by evident deductions of reason, as in demonstrations —we do not need the help of revelation as something necessary to gain our assent and bring them into our minds. For the natural ways of knowledge could settle them there, or had already done so; and that is the greatest assurance we can possibly have of anything, except where God reveals it to us directly—and even then our assurance can be no greater than our knowledge that it is a revelation from God. But nothing, I think, can under that title shake or overrule plain knowledge, or rationally persuade anyone to accept as true something in direct contradiction to the clear evidence of his own understanding. For since no evidence of our faculties, by which we receive such revelations, can exceed—if it can even equal—the certainty of our intuitive knowledge, we can never accept as a truth anything directly contrary to our clear and distinct knowledge. For example, the ideas of

one body and one place agree so clearly, and the mind perceives their agreement so evidently, that we can never assent to a proposition affirming that the same body is in two distant places at once, however much it may claim the authority of a divine revelation. For the evidence, first, that we are not deceiving ourselves in ascribing it to God, and secondly, that we understand it rightly, can never be as great as the evidence of our own intuitive knowledge, by which we see that it is impossible for the same body to be in two places at once. And therefore no proposition can be accepted as divine revelation, or receive the assent due to all such revelation, if it contradicts our clear intuitive knowledge. For this would overturn the principles and foundations of all knowledge, evidence, and assent whatsoever. There would be no difference left between truth and falsehood, no standards of credible and incredible in the world, if doubtful propositions were to take precedence over self-evident ones, and what we know for certain were to give way to what we may possibly be mistaken about. So it will be useless to press, as matters of faith, propositions contrary to the clear perception of the agreement or disagreement of any of our ideas. They cannot win our assent under that title or any other. For faith can never convince us of anything that contradicts our knowledge. Although faith is founded on the testimony of God (who cannot lie) revealing some proposition to us, we cannot have an assurance that it truly is a divine revelation greater than our own knowledge, since the whole strength of the certainty depends on our own knowledge that God revealed it. And in this case, where the proposition supposed to be revealed contradicts our knowledge or reason, that knowledge will always have this objection hanging over it, namely: that we cannot see how to conceive that something comes from God, the bountiful Author of our being, which, if accepted as true, must overturn all the principles and foundations of knowledge he has given us, make all our faculties useless, wholly destroy the most excellent part of his workmanship, our understandings, and put a man in a condition in which he will have less light and less guidance than the beast that per-

ishes.[13] For if the human mind can never have clearer (and perhaps not even as clear) evidence that anything is a divine revelation than it has of the principles of its own reason, it can never have grounds to abandon the clear evidence of its reason in order to make room for a proposition whose revelation has no greater evidence than those principles have.

4.18.6 *Traditional revelation much less.*—This far a man has use for reason, and ought to listen to it, even in direct and original revelation, where it is supposed to be made to himself. But for all those who do not claim direct revelation, but are required to obey and to accept truths revealed to others, handed down to them by the tradition of writings or by word of mouth, reason has a great deal more to do, and it alone can lead us to accept them. For since the matter of faith is only divine revelation and nothing else, faith as we use the word (commonly called divine faith) has to do with no propositions except those supposed to be divinely revealed. So I do not see how those who make revelation alone the sole object of faith can say that it is a matter of faith, and not of reason, to believe that this or that proposition found in this or that book is divinely inspired—unless it has been revealed that that proposition, or everything in that book, was communicated by divine inspiration. Without such a revelation, believing or not believing that the proposition or book has divine authority can never be a matter of faith, but only a matter of reason, and one I can come to assent to only by the use of my reason. And reason can never require or enable me to believe what is contrary to itself, since it is impossible for reason ever to produce assent to what appears unreasonable to it.

In all things, therefore, where we have clear evidence from our ideas and from the principles of knowledge I mentioned above, reason is the proper judge. Revelation, by agreeing with reason, may confirm its dictates, but cannot in such cases invalidate its decrees. Nor can we be obliged, where we have the clear and evident sentence of reason, to abandon it for the contrary

13 "The beast that perishes" echoes Psalm 49:12, 20.

opinion on the pretext that it is a matter of faith; faith can have no authority against the plain and clear dictates of reason.

4.18.7 *Things above reason.*—But thirdly, there are many things of which we have very imperfect notions, or none at all, and other things of whose past, present, or future existence we can have no knowledge at all by the natural use of our faculties. These, being beyond the discovery of our natural faculties and above reason, are the proper matter of faith when they are revealed. Thus, that some of the angels rebelled against God and so lost their first happy state, and that the dead will rise and live again —these and the like, being beyond the discovery of reason, are purely matters of faith, with which reason has directly nothing to do.

4.18.8 *Or not contrary to reason, if revealed, are matter of faith.*—But in giving us the light of reason, God has not tied his own hands from granting us, when he sees fit, the light of revelation in any of those matters on which our natural faculties can give a probable determination. So revelation, where God has been pleased to give it, must prevail over the probable conjectures of reason. For the mind is not certain of the truth of what it does not evidently know, but only yields to the probability it sees in it; and so it is bound to give its assent to such testimony as it is satisfied comes from one who cannot err and will not deceive. Even so, it still belongs to reason to judge whether it truly is a revelation, and what the words in which it is delivered mean. Indeed, if anything is taken for revelation that is contrary to the plain principles of reason and to the evident knowledge the mind has of its own clear and distinct ideas, then reason must be listened to, as in a matter within its province. For a man can never know as certainly that a proposition contradicting the clear principles and evidence of his own knowledge was divinely revealed, or that he rightly understands the words in which it is delivered, as he knows that the contrary is true. And so he is bound to consider and judge it as a matter of reason, and not to swallow it unexamined as a matter of faith.

4.18.9 *Revelation, in matters where reason cannot judge, or can judge only with probability, ought to be listened to.*—First, any revealed proposition whose truth our mind cannot judge by its natural faculties and notions is purely a matter of faith, and above reason.

Secondly, all propositions that the mind, by the use of its natural faculties, can come to determine and judge from naturally acquired ideas are matters of reason. But there is still this difference. Some of them are propositions about which the mind has only uncertain evidence, so that it is persuaded of their truth only on probable grounds, which still allow that the contrary could be true without doing violence to the certain evidence of its own knowledge or overturning the principles of its own reason. In such probable propositions, I say, an evident revelation ought to determine our assent even against probability. For where the principles of reason have not shown a proposition to be certainly true or false, clear revelation, as another principle of truth and ground of assent, may decide it; and so it may be a matter of faith and also above reason. For since reason in that particular matter could reach no higher than probability, faith gave the decision where reason fell short, and revelation showed on which side the truth lay.

4.18.10 *In matters where reason can afford certain knowledge, reason is to be listened to.*—This far the dominion of faith reaches, and that without any violence to or hindrance of reason, which is not harmed or disturbed, but assisted and improved, by new discoveries of truth coming from the eternal fountain of all knowledge. Whatever God has revealed is certainly true; there can be no doubt of it. This is the proper object of faith. But whether something is a divine revelation or not, reason must judge; and reason can never permit the mind to reject greater evidence in order to embrace what is less evident, nor allow it to hold on to probability in opposition to knowledge and certainty. There can be no evidence that any traditional revelation is of divine origin—in the words in which we receive it and in the sense in which we understand it—as clear and as certain as the

evidence of the principles of reason. And therefore nothing that is contrary to and inconsistent with the clear and self-evident dictates of reason has a right to be urged or assented to as a matter of faith in which reason has nothing to do. Whatever is divine revelation ought to overrule all our opinions, prejudices, and interests, and has a right to be received with full assent. A submission of our reason to faith like this does not remove the landmarks of knowledge. It does not shake the foundations of reason, but leaves us the use of our faculties for which they were given to us.

4.18.11 *If the boundaries are not set between faith and reason, no enthusiasm or extravagance in religion can be contradicted.*—If the provinces of faith and reason are not kept distinct by these boundaries, there will be no room at all for reason in matters of religion, and the extravagant opinions and ceremonies found in the various religions of the world will not deserve blame. For to this crying up of faith in opposition to reason we may, I think, largely attribute the absurdities that fill almost all the religions that hold and divide mankind. For people who have been taught as a principle that they must not consult reason in matters of religion, however plainly those matters contradict common sense and the very principles of all their knowledge, have let their fancies and natural superstition run loose. They have been led by them into such strange opinions and extravagant practices in religion that a thoughtful man cannot help being amazed at their follies, and judging them so far from being acceptable to the great and wise God that he cannot avoid thinking them ridiculous and offensive to a sober, good man. So, in effect, religion, which should most distinguish us from beasts and ought especially to raise us, as rational creatures, above the brutes, is the very thing in which people often appear most irrational, and more senseless than the beasts themselves. "Credo, quia impossibile est"—"I believe because it is impossible"—might pass in a good man for an outburst of zeal, but it would

prove a very bad rule for people to choose their opinions or religion by.[14]

ENTHUSIASM

Locke criticizes claims to private inspiration that set aside reason and rest on strength of conviction.

4.19.1 *Love of truth necessary.*—Anyone who would seriously set about the search for truth ought, first of all, to prepare his mind with a love of it. For someone who does not love it will not take much trouble to get it, or be much concerned when he misses it. There is nobody in the commonwealth of learning who does not profess to be a lover of truth, and there is not a rational creature who would not take it badly to be thought anything else. And yet, for all this, one may truly say that there are very few lovers of truth for truth's sake, even among those who persuade themselves that they are such. How a man may know whether he is in earnest about this is worth inquiring into. I think there is one unerring mark of it, namely, not entertaining any proposition with greater assurance than the proofs it is built on will warrant. Whoever goes beyond this measure of assent plainly does not receive truth out of love for it. He does not love truth for truth's sake, but for some other ulterior purpose. For the evidence that any proposition is true (apart from those that are self-evident) lies only in the proofs a man has of it. So whatever degrees of assent he gives it beyond the degrees of that evidence, it is plain that all that surplus of assurance is owing to some other affection, and not to the love of truth. It is as impossible that the love of truth should carry my assent above the evidence I have that a thing is true, as that the love of truth should make me assent to a proposition for the sake of evidence it does not have, evidence that it is true. That would be, in effect, to love it as a truth because it is possible or probable that it may not be true. Some truths do not take possession of our minds by

14 The saying is a traditional paraphrase of Tertullian, *On the Flesh of Christ* 5 ("it is certain, because it is impossible").

the irresistible light of self-evidence or by the force of demonstration. With any such truth, the arguments that win our assent to it are the vouchers and pledge of its probability to us, and we can receive it only as what those arguments present it to our understandings as being. Whatever credit or authority we give a proposition beyond what it gets from the principles and proofs it rests on is owing to our inclinations in that direction. To that extent it detracts from the love of truth as such. Truth can receive no evidence from our passions or interests, and so it should receive no tinge from them either.

4.19.2 *A forwardness to dictate, where it comes from.*—Assuming an authority to dictate to others, and an eagerness to prescribe their opinions for them, is a constant companion of this bias and corruption of our judgments. For how could it be otherwise? Someone who has already imposed on his own belief will be ready to impose on another's. Who can reasonably expect arguments and conviction in his dealings with others from a man whose understanding is not used to them in his dealings with himself? Such a man does violence to his own faculties, tyrannizes over his own mind, and usurps the prerogative that belongs to truth alone. That prerogative is to command assent by its own authority only, that is, by, and in proportion to, the evidence it carries with it.

4.19.3 *Force of enthusiasm.*—On this occasion I will take the liberty of considering a third ground of assent. With some men it has the same authority as faith or reason, and is relied on just as confidently. I mean enthusiasm, which sets reason aside and would set up revelation without it. In doing so it in effect takes away both reason and revelation. It puts in their place the ungrounded fancies of a man's own brain, and adopts them as a foundation for both opinion and conduct.

4.19.4 *Reason and revelation.*—Reason is natural revelation. By it the eternal Father of light and fountain of all knowledge communicates to mankind that portion of truth he has placed within reach of their natural faculties. Revelation is natural reason enlarged by a new set of discoveries communicated directly by

God, and reason vouches for their truth by the testimony and proofs it gives that they come from God. So anyone who takes away reason to make way for revelation puts out the light of both. He does much the same as a man who would persuade another to put out his eyes, the better to receive the remote light of an invisible star through a telescope.

4.19.5 *Rise of enthusiasm.*—Immediate revelation is a much easier way for men to establish their opinions and regulate their conduct than the tedious, and not always successful, labor of strict reasoning. It is no wonder, then, that some have been very apt to lay claim to revelation. They persuade themselves that they are under the special guidance of heaven in their actions and opinions, especially in those they cannot account for by the ordinary methods of knowledge and the principles of reason. Hence we see this in every age. Some men have melancholy mixed with their devotion. Others have so high an opinion of themselves that they believe they have a greater familiarity with God, and a closer admission to his favor, than others are granted. Such men have often flattered themselves with the conviction that they have immediate communication with the Deity and frequent messages from the Divine Spirit. I grant that it cannot be denied that God is able to enlighten the understanding by a ray darted into the mind directly from the fountain of light. This, as they understand it, he has promised to do. And who, then, has so good a claim to expect it as those who are his own special people, chosen by him and depending on him?

4.19.6 *Enthusiasm.*—Once their minds are prepared in this way, whatever groundless opinion settles itself strongly on their imagination is taken for an illumination from the Spirit of God, and at once for something of divine authority. And whatever odd action they find in themselves a strong inclination to do, they conclude that the impulse is a call or direction from heaven and must be obeyed. It is a commission from above, and they cannot go wrong in carrying it out.

4.19.7 This I take to be enthusiasm, properly so called. It is founded neither on reason nor on divine revelation, but arises from

the notions of an overheated or self-conceited brain. Yet wherever it once gets a foothold, it works more powerfully on men's convictions and actions than either of those two, or both together. For men are most readily obedient to the impulses they receive from themselves, and the whole man is sure to act more vigorously when the whole man is carried along by a natural motion. For a strong notion, like a new principle, easily carries everything along with it. Once it has risen above common sense and been freed from every restraint of reason and check of reflection, it is heightened into a divine authority, with our own temperament and inclination working along with it.

4.19.8 *Enthusiasm mistaken for seeing and feeling.*—The odd opinions and extravagant actions into which enthusiasm has led men ought to be enough to warn them against this wrong principle, which is so apt to mislead them in both belief and conduct. Yet the love of something extraordinary flatters many men's laziness, ignorance, and vanity, and so do the ease and glory of being inspired and raised above the common and natural ways of knowledge. Once they have got into this way of immediate revelation, of illumination without searching, of certainty without proof and without examination, it is a hard matter to get them out of it. Reason is lost on them; they are above it. They see the light poured into their understandings, and cannot be mistaken. It is clear and visible there, like the light of bright sunshine; it shows itself, and needs no proof but its own evidence. They feel the hand of God moving them within, and the impulses of the Spirit, and cannot be mistaken about what they feel. So they reassure themselves, and are sure that reason has nothing to do with what they see and feel in themselves. What they experience as plainly as the senses admits no doubt and needs no proof. Would not a man be ridiculous if he demanded to have it proved to him that the light shines and that he sees it? It is its own proof, and can have no other. When the Spirit brings light into our minds, it dispels darkness. We see this light as we see the light of the sun at noon, and need no twilight of reason to show it to us. This light from heaven is strong,

clear, and pure, and carries its own demonstration with it. We might as rationally use a glowworm to help us find the sun as examine the heavenly ray by our dim candle, reason.

4.19.9 *How enthusiasm is to be detected.*—This is how these men talk. They are sure because they are sure, and their convictions are right because they hold them strongly. Strip what they say of the metaphor of seeing and feeling, and this is all it amounts to. And yet these similes so impose on them that they serve them as certainty in themselves and as demonstration to others.

4.19.10 But let us examine a little soberly this internal light, and this feeling on which they build so much. These men say they have clear light, and they see; they have awakened sense, and they feel. They are sure no one can dispute this with them. For when a man says he sees or feels, nobody can deny that he does. But here let me ask: this seeing, is it the perception of the truth of the proposition, or the perception that it is a revelation from God? This feeling, is it a perception of an inclination or fancy to do something, or a perception of the Spirit of God moving that inclination? These are two very different perceptions, and they must be carefully distinguished if we do not want to deceive ourselves. I may perceive the truth of a proposition and still not perceive that it is an immediate revelation from God. I may perceive the truth of a proposition in Euclid without its being a revelation, or without my perceiving it to be one. Indeed, I may perceive that I did not come by this knowledge in a natural way, and so conclude that it was revealed, without perceiving that it is a revelation from God. For there are spirits that are not divinely commissioned and yet may excite those ideas in me, and lay them before my mind in such an order that I perceive their connection. So when a proposition comes into my mind and I do not know how, my knowledge of it is not a perception that it is from God. Much less is a strong conviction that it is true a perception that it is from God, or even that it is true. However much it may be called light and seeing, I suppose it is at most only belief and assurance. The proposition taken for a revelation is not one they know to be true, but one they take to be true. For

where a proposition is known to be true, revelation is needless. And it is hard to conceive how there can be a revelation to anyone of what he knows already. If, then, it is a proposition they are persuaded is true but do not know to be true, then whatever they may call it, it is not seeing but believing. For these are two wholly distinct ways by which truth comes into the mind, so that one is not the other. What I see, I know to be so by the evidence of the thing itself. What I believe, I take to be so on the testimony of another. But I must know that this testimony has been given; otherwise what ground do I have for believing? I must see that it is God who reveals this to me, or else I see nothing. The question here, then, is this. How do I know that God is the one revealing this to me? How do I know that this impression is made on my mind by his Holy Spirit, and that I therefore ought to obey it? If I do not know this, then however great the assurance I am possessed with, it is groundless, and whatever light I claim is nothing but enthusiasm. The proposition supposed to be revealed may be evidently true in itself, or visibly probable, or uncertain by the natural ways of knowledge. Either way, the proposition that must be well grounded and shown to be true is this: that God is the revealer of it, and that what I take to be a revelation is certainly put into my mind by him, and is not an illusion dropped in by some other spirit or raised by my own imagination. For, if I am not mistaken, these men accept it as true because they presume God revealed it. Is it not incumbent on them, then, to examine on what grounds they presume it to be a revelation from God? If they do not, all their confidence is mere presumption, and this light that so dazzles them is nothing but a will-o'-the-wisp. It leads them constantly around this circle: it is a revelation because they firmly believe it, and they believe it because it is a revelation.

4.19.11 *Enthusiasm lacks evidence that the proposition is from God.*— Anything that is divine revelation needs no other proof than that it is an inspiration from God, for he can neither deceive nor be deceived. But how is it to be known that a proposition in our minds is a truth infused by God? How do we know it is a truth he

has revealed to us and declared to us, which we therefore ought to believe? It is here that enthusiasm lacks the evidence it claims. For men possessed in this way boast of a light by which, they say, they are enlightened and brought to the knowledge of this or that truth. But if they know it to be a truth, they must know it to be so in one of two ways: either by its own self-evidence to natural reason, or by the rational proofs that establish it. If they see and know it to be a truth in either of these ways, they suppose in vain that it is a revelation. For they know it to be true in the same way that any other man may naturally know it without the help of revelation. That is how all truths, of whatever kind, that enlighten uninspired men came into their minds and are established there. If they say they know it to be true because it is a revelation from God, the reason is good. But then it will be asked how they know it to be a revelation from God. They may say they know it by the light it brings with it, which shines brightly in their minds and which they cannot resist. If so, I beg them to consider whether this is anything more than what we have already noticed, namely, that it is a revelation because they strongly believe it to be true. For all the light they speak of is only a strong, though ungrounded, conviction in their own minds that it is a truth. As for rational grounds from proofs that it is a truth, they must admit they have none. If they had them, it would not be received as a revelation, but on the ordinary grounds on which other truths are received. Suppose they believe it to be true because it is a revelation, and have no reason for its being a revelation except that they are fully persuaded, without any other reason, that it is true. Then they believe it to be a revelation only because they strongly believe it to be a revelation. That is a very unsafe ground to proceed on, whether in our beliefs or in our actions. And what quicker way could there be to run ourselves into the most extravagant errors and misconduct than to set up fancy in this way as our supreme and only guide? What quicker way than to believe any proposition to be true, or any action to be right, only because we believe it to be so? The strength of our convictions is no evidence at all

of their correctness. Crooked things may be as stiff and inflexible as straight ones, and men may be as positive and peremptory in error as in truth. How else do we come to have unmanageable zealots in different and opposing parties? Everyone thinks he has this light in his mind, and in this case it is nothing but the strength of his own conviction. If that light is evidence that something is from God, then contrary opinions have the same claim to be inspirations. God will be the father not only of lights, but of opposite and contradictory lights, leading men in contrary directions. And contradictory propositions will be divine truths, if an ungrounded strength of assurance is evidence that a proposition is a divine revelation.

4.19.12 *Firmness of conviction no proof that any proposition is from God.*—This cannot be otherwise as long as firmness of conviction is made the cause of believing, and confidence in being right is made an argument for truth. St. Paul himself believed he was doing right, and that he had a call to it, when he persecuted the Christians, whom he confidently thought to be in the wrong. Yet it was he, not they, who was mistaken. Good men are still men, liable to mistakes. They are sometimes warmly committed to errors that they take for divine truths shining in their minds with the clearest light.

4.19.13 *Light in the mind, what it is.*—Light, true light, in the mind is, and can be, nothing but the evidence of the truth of a proposition. If it is not a self-evident proposition, all the light it has or can have comes from the clearness and validity of the proofs on which it is received. To talk of any other light in the understanding is to put ourselves in the dark, or in the power of the Prince of Darkness. It is to give ourselves up, by our own consent, to delusion, and to believe a lie. For if strength of conviction is the light that must guide us, I ask: how is anyone to distinguish between the delusions of Satan and the inspirations of the Holy Spirit? Satan can transform himself into an angel of light. Those who are led by this son of the morning are as fully satisfied of their illumination as anyone who really is enlightened. That is, they are just as strongly convinced that they are enlightened by

the Spirit of God. They acquiesce and rejoice in it, and are moved by it. Nobody can be more sure than they are, or more in the right, if their own strong belief may be the judge.[15]

REASON AS THE LAST JUDGE

Revelation must be judged by reason and Scripture, as the prophets of old were given outward signs.

4.19.14 *Revelation must be judged by reason.*—Anyone, therefore, who will not give himself up to all the extravagances of delusion and error must put this guide of his, the light within, to the test. God, when he makes the prophet, does not unmake the man. He leaves all the man's faculties in their natural state, so that he can judge whether his inspirations are of divine origin or not. When God illuminates the mind with supernatural light, he does not extinguish the natural light. If he would have us assent to the truth of a proposition, he does one of two things. Either he makes that truth evident by the usual methods of natural reason, or he makes it known, by his authority, to be a truth he would have us assent to, and convinces us that it is from him by some marks about which reason cannot be mistaken. Reason must be our last judge and guide in everything. I do not mean that we must consult reason and examine whether a proposition revealed by God can be established by natural principles, and then reject it if it cannot. But consult reason we must, and by it examine whether the proposition is a revelation from God or not. And if reason finds it to be revealed by God, reason then declares for it as much as for any other truth, and makes it one of her own dictates. If we have nothing but the strength of our convictions by which to judge our convictions, every notion that thoroughly warms our imagination must pass for an inspiration. If reason may not examine their truth by something outside the convictions themselves, then inspirations and delusions, truth

15 "Angel of light": 2 Corinthians 11:14. "Son of the morning": Isaiah 14:12, traditionally read as referring to Lucifer, that is, Satan.

and falsehood, will have the same measure, and it will be impossible to tell them apart.

4.19.15 *Belief no proof of revelation.*—Take this internal light, or any proposition that under that title we take to be inspired. If it agrees with the principles of reason, or with the word of God, which is attested revelation, reason warrants it. We may then safely accept it as true and be guided by it in our belief and actions. If it receives no testimony or evidence from either of these rules, we cannot take it for a revelation, or even for true, until we have some other mark that it is a revelation besides our believing that it is one. So we see that the holy men of old who had revelations from God had something else, besides that internal light of assurance in their own minds, to testify to them that it was from God. They were not left to rely on their convictions alone for the belief that those convictions came from God. They had outward signs to convince them of the author of those revelations. And when they had to convince others, they were given a power to justify the truth of their commission from heaven, and to assert by visible signs the divine authority of the message they were sent with. Moses saw the bush burn without being consumed, and heard a voice out of it. This was something more than finding an impulse in his mind to go to Pharaoh so that he might bring his brethren out of Egypt. And yet he did not think this enough to authorize him to go with that message. God then worked another miracle and turned his rod into a serpent, which assured him that he had a power to testify to his mission by repeating the same miracle before those he was sent to. Gideon was sent by an angel to deliver Israel from the Midianites, and yet he asked for a sign to convince him that this commission was from God.[16] These instances, and several like them to be found among the prophets of old, are enough to show that the prophets did not think an inward seeing or conviction of their own minds, without any other proof, was sufficient evidence that it was from God. This holds even though Scripture

16 Moses: Exodus 3–4. Gideon: Judges 6.

does not everywhere mention their asking for or having such proofs.

4.19.16 In what I have said I am far from denying that God can, or sometimes does, enlighten men's minds in grasping certain truths, or stir them to good actions, by the immediate influence and assistance of the Holy Spirit, without any extraordinary signs accompanying it. But in such cases too we have reason and Scripture, unerring rules for knowing whether it is from God or not. Where the truth embraced agrees with the revelation in the written word of God, or the action accords with the dictates of right reason or holy writ, we may be assured that we run no risk in accepting it as such. Perhaps it is not an immediate revelation from God working extraordinarily on our minds. Yet we are sure it is warranted by the revelation of truth that he has given us. But the strength of our private conviction within ourselves cannot warrant it to be a light or motion from heaven. Nothing can do that but the written word of God outside us, or that standard of reason which we share with all men. Where reason or Scripture is explicit for any opinion or action, we may accept it as having divine authority. But the strength of our convictions cannot by itself give it that stamp. The bent of our own minds may favor it as much as we like. That may show it to be a darling of our own, but it will by no means prove it to be an offspring of heaven, of divine origin.

ERROR

Wrong assent comes from lack of proofs, lack of skill, lack of will, and wrong measures of probability.

4.20.1 *Causes of error.*—Knowledge is to be had only of visible and certain truth. Error, therefore, is not a fault of our knowledge but a mistake of our judgment, which gives assent to what is not true.

But suppose assent is grounded on likelihood. Suppose the proper object and motive of our assent is probability, and that probability consists in what was set out in the preceding

chapters. Then it will be asked how men come to give their assent contrary to probability. For nothing is more common than conflicting opinions. Nothing is more obvious than that one man wholly disbelieves what another only doubts, and a third steadfastly believes and firmly holds to. The reasons for this may be very various, but I suppose they can all be reduced to these four:

1. Lack of proofs. 2. Lack of ability to use them. 3. Lack of will to use them. 4. Wrong measures of probability.

4.20.2 1. *Lack of proofs.*—First, by lack of proofs I do not mean only the lack of proofs that exist nowhere and so are nowhere to be had. I also mean the lack of proofs that do exist or could be obtained. In this sense men lack proofs when they do not have the means or opportunity to make experiments and observations themselves that bear on the proof of a proposition, and do not have the means to inquire into and collect the testimonies of others. This is the state of the greater part of mankind. They are given over to labor and enslaved to the necessity of their humble condition, and their lives are worn out simply in providing for living. These men's opportunities for knowledge and inquiry are commonly as narrow as their fortunes. Their understandings receive little instruction when all their time and effort are spent quieting the growling of their own bellies or the cries of their children. A man who drudges all his life at a laborious trade cannot be expected to know much about the variety of things done in the world. It would be like expecting a packhorse to be skilled in the geography of the country when it is driven constantly back and forth along a narrow lane and dirty road, only to market. A man may lack leisure, books, and languages, and the opportunity of conversing with a variety of men. Such a man is in no position to collect the testimonies and observations that exist and are needed to establish many, indeed most, of the propositions that human societies judge most important. Nor can he find grounds of assurance as great as the belief he would build on them is thought to require. So a great part of mankind, by the natural and unalterable state of things in this world and

the constitution of human affairs, is unavoidably given over to invincible ignorance of the proofs on which others build, and which are needed to establish those opinions. Most men have a great deal to do just to get the means of living. They are in no position to pursue the means of learned and laborious inquiry.

4.20.3 *Objection: what will become of those who lack them? Answered.*—What shall we say, then? Is the greater part of mankind, by the necessity of their condition, subjected to unavoidable ignorance in the things that matter most to them? (For it is about these that one naturally asks.) Does the bulk of mankind have no other guide than accident and blind chance to lead them to their happiness or misery? Are the current opinions and licensed guides of each country sufficient evidence and security for every man to stake his great concerns on, and even his everlasting happiness or misery? Or can those be the certain and infallible oracles and standards of truth which teach one thing in Christendom and another in Turkey? Or shall a poor countryman be eternally happy because he happened to be born in Italy, or a day laborer be unavoidably lost because he had the bad luck to be born in England? How ready some men may be to say some of these things I will not examine here. But of this I am sure: men must allow one or another of these to be true (let them choose whichever they like). Otherwise they must grant that God has given men faculties sufficient to direct them in the way they should go, if only they will seriously use them for that purpose when their ordinary occupations give them the leisure. No man is so wholly occupied with attending to the means of living that he has no spare time at all to think about his soul and inform himself in matters of religion. If men were as intent on this as they are on things of lesser concern, no one would be so enslaved to the necessities of life that he could not find many free moments, which might be put to use for this improvement of his knowledge.

4.20.4 *People hindered from inquiry.*—Besides those whose improvement and information are restricted by the narrowness of their fortunes, there are others whose large fortunes would

amply supply books and the other things needed for clearing up doubts and discovering truth. But these people are shut in closely by the laws of their countries, and by the strict guard kept by those whose interest it is to keep them ignorant, for fear that if they knew more they would believe less in their keepers. These people are as far, indeed farther, from the liberty and opportunity of a fair inquiry than those poor and wretched laborers we spoke of before. However high and great they may seem, they are confined to narrowness of thought, and enslaved in what should be the freest part of man, their understanding. This is generally the case with all who live in places where care is taken to propagate truth without knowledge. There men are forced to be of the religion of the country blindly, taking it as it comes. They must therefore swallow opinions the way foolish people swallow quacks' pills, without knowing what they are made of or how they will work, and with nothing to do but believe that they will effect the cure. But in this they are much more miserable than those foolish people. They are not free to refuse to swallow what they might perhaps rather leave alone, or to choose the physician they would trust themselves to.

4.20.5 2. *Lack of skill to use them.*—Second, some people lack the skill to use the evidence of probabilities they have. They cannot carry a chain of consequences in their heads, or weigh exactly the preponderance of opposing proofs and testimonies, giving every circumstance its due weight. Such people may easily be misled into assenting to positions that are not probable. There are some men of one syllogism, some of only two, and no more; and others who can advance only one step further. These cannot always discern the side on which the strongest proofs lie, and cannot consistently follow what is in itself the more probable opinion. Now, I think nobody who has had any dealings with his neighbors will question that there is such a difference between men in respect of their understandings. He need never have been to Westminster Hall or the Exchange on the one hand, or to almshouses or asylums on the other. This great difference in men's intellects may arise from some defect in the bodily organs

particularly adapted to thinking. It may arise from the dullness or intractability of those faculties through lack of use, or, as some think, from natural differences in men's souls themselves, or from some or all of these together. It does not matter to examine that here. Only this is evident: men's understandings, apprehensions, and reasonings differ in degree so widely that one may, without doing injury to mankind, affirm this. In this respect there is a greater distance between some men and others than between some men and some beasts.[17] But how this comes about is a speculation that, though of great consequence, is not necessary to our present purpose.

4.20.6 3. *Lack of will to use them.*—Third, there is another sort of people who lack proofs, not because the proofs are out of their reach but because they will not use them. They have wealth and leisure enough, and lack neither abilities nor other aids, and yet they are none the better for them. The eager pursuit of pleasure, or constant drudgery in business, keeps some men's thoughts elsewhere. Laziness and inattention in general, or a particular aversion to books, study, and meditation, keep others from any serious thought at all. And some fear that an impartial inquiry would not favor the opinions that best suit their prejudices, lives, and designs. So they content themselves with taking on trust, without examination, whatever they find convenient and fashionable. In this way most men, even among those who could do otherwise, pass their lives without any acquaintance with the probabilities they have a stake in knowing, much less a rational assent to them. Yet these probabilities lie so much within their view that to be convinced of them they need only turn their eyes that way. We know that some men will not read a letter thought to bring bad news. And many men who have reason to fear their affairs are in no very good shape refrain from doing their accounts, or even thinking about their estates. Some men's ample fortunes allow them leisure to improve their understandings. How such men can be satisfied with lazy ignorance, I can-

17 Westminster Hall housed England's chief law courts; the Royal Exchange was the meeting place of London's merchants.

not tell. But it seems to me that they have a low opinion of their souls. They spend all their income on provisions for the body and none of it on obtaining the means and aids of knowledge. They take great care always to present a neat and splendid exterior, and would think themselves miserable in coarse clothes or a patched coat. And yet they contentedly let their minds go out in public in a piebald livery of coarse patches and borrowed scraps, whatever chance or their country tailor has been pleased to clothe them in. (By their country tailor I mean the common opinion of the people they have associated with.) I will not mention here how unreasonable this is for men who ever think of a future state and their stake in it, which no rational man can avoid doing sometimes. Nor will I point out what a shame and embarrassment it is, even to the greatest despisers of knowledge, to be found ignorant of things they have a stake in knowing. But this at least is worth the consideration of those who call themselves gentlemen. They may think that credit, respect, power, and authority are the companions of their birth and fortune. Yet they will find all these still being carried off by men of lower condition who surpass them in knowledge. Those who are blind will always be led by those who see, or else fall into the ditch. And the man who is subjected in his understanding is certainly the most subjected and the most enslaved of all. In the preceding cases some of the causes of wrong assent have been shown. We have seen how it comes about that probable doctrines are not always received with an assent proportionate to the reasons there are for their probability. But so far we have considered only those probabilities whose proofs do exist but do not appear to the person who embraces the error.

WRONG MEASURES OF PROBABILITY

Doubtful principles, received hypotheses, ruling passions, and authority lead men to assent wrongly.

4.20.7 4. *Wrong measures of probability; of these:*—Fourthly, there remains the last sort: those who, even where the real probabilit-

ies appear and are plainly laid before them, do not accept being convinced and do not yield to evident reasons, but either ἐπέχειν, suspend their assent, or give it to the less probable opinion. This danger threatens those who have adopted wrong measures of probability. These are:[18]

1. Propositions that are not certain and evident in themselves, but doubtful and false, taken up as principles. 2. Received hypotheses. 3. Predominant passions or inclinations. 4. Authority.

4.20.8 1. *Doubtful propositions taken for principles.*—First, the first and firmest ground of probability is the conformity anything has with our knowledge, especially with that part of our knowledge which we have embraced and continue to regard as principles. These have so great an influence on our opinions that we usually judge of truth and measure probability by them. They do so to such a degree that what is inconsistent with our principles, far from passing as probable with us, will not even be allowed to be possible. The reverence paid to these principles is so great, and their authority so far above all other authority, that not only the testimony of other men but even the evidence of our own senses is often rejected when it offers to vouch for anything contrary to these established rules. How much the doctrine of innate principles, and the doctrine that principles are not to be proved or questioned, has contributed to this, I will not examine here. This much I readily grant: one truth cannot contradict another. But I also take the liberty of saying that everyone ought to be very careful what he admits as a principle. He should examine it strictly, and see whether he certainly knows it to be true of itself, by its own evidence, or whether he only believes it confidently on the authority of others. For whoever has absorbed wrong principles, and has blindly given himself up to the authority of some opinion that is not in itself evidently true, has a strong bias put into his understanding, which will unavoidably misguide his assent.

4.20.9 Nothing is more common than for children to receive into their minds propositions (especially about matters of religion)

from their parents, nurses, or those around them. These are slipped into their unwary, as well as unbiased, understandings and fastened there by degrees. At last, whether they are true or false alike, they are riveted there by long custom and education, beyond all possibility of being pulled out again. For when men are grown up and reflect on their opinions, they find that those of this sort are as old in their minds as their very memories. Since they never noticed these opinions being slipped in so early, or by what means they got them, they are apt to revere them as sacred things and not to allow them to be profaned, touched, or questioned. They look on them as the Urim and Thummim, set up in their minds directly by God himself, to be the great and unerring deciders of truth and falsehood, and the judges to which they are to appeal in every kind of controversy.[19]

4.20.10 Once this opinion of his principles (let them be what they will) is established in anyone's mind, it is easy to imagine what reception will be given to any proposition that would undermine their authority or in any way cut across these internal oracles, however clearly it is proved. Meanwhile the grossest absurdities and improbabilities, provided they agree with such principles, go down smoothly and are easily digested. Men firmly believe quite contrary opinions in the various religions of mankind, though these opinions are often equally absurd, and they hold them with great obstinacy. That obstinacy is as evident a proof of this way of reasoning from received, traditional principles as it is an unavoidable consequence of it. So men will disbelieve their own eyes, renounce the evidence of their senses, and give the lie to their own experience, rather than admit anything that disagrees with these sacred tenets. Take an intelligent Roman Catholic who, from the first dawning of any notions in his understanding, has had this principle con-

18 ἐπέχειν (epechein), "to hold back," is the ancient Skeptics' term for suspending judgment.

19 The Urim and Thummim were objects carried in the breastplate of the Israelite high priest and used to learn God's will (Exodus 28:30).

stantly drilled into him, namely, that he must believe as the church (that is, those of his communion) believes, or that the pope is infallible. Suppose he never so much as heard this questioned until, at forty or fifty years old, he met someone with other principles. How ready he is to swallow the doctrine of transubstantiation, not only against all probability but even against the clear evidence of his senses! This principle has such an influence on his mind that he will believe that to be flesh which he sees to be bread. And what way will you find to convince a man that an improbable opinion he holds is wrong, if, with some philosophers, he has laid it down as a foundation of reasoning that he must believe his reason (for so men improperly call arguments drawn from their principles) against his senses? Let an enthusiast be grounded in the principle that he or his teacher is inspired and moved by a direct communication from the divine Spirit, and it is in vain that you bring the evidence of clear reasons against his doctrine. Therefore whoever has absorbed wrong principles cannot be moved by the most evident and convincing probabilities in matters inconsistent with those principles. This holds until they are candid and honest enough with themselves to be persuaded to examine those very principles, which many never allow themselves to do.

4.20.11 2. *Received hypotheses.*—Secondly, next to these are men whose understandings are cast in a mold and shaped exactly to the size of a received hypothesis. The difference between these and the former is that they will admit matter of fact, and agree about it with those who disagree with them. They differ only in assigning the reasons and explaining the manner of operation. They do not defy their senses as openly as the former do. They can bear to listen a little more patiently to what their senses tell them. But they will by no means accept those reports when it comes to explaining things. Nor will they be won over by probabilities that would convince them that things do not come about in exactly the way they have decided within themselves that they do. Would it not be intolerable for a learned professor, and something to make his scarlet gown blush, to have his

authority overturned in an instant by an upstart innovator? It is an authority of forty years' standing, hewn out of the hard rock of Greek and Latin at no small expense of time and candle, and confirmed by general tradition and a reverend beard. Can anyone expect that he should be made to confess that what he taught his students thirty years ago was all error and mistake, and that he sold them hard words and ignorance at a very high price? What probabilities, I say, are enough to prevail in such a case?[20] And who will ever be persuaded, by the most compelling arguments, to strip himself all at once of all his old opinions and claims to knowledge and learning, which he has labored for with hard study all his life, and to turn himself out stark naked to search for new notions all over again? All the arguments that can be used will be as unable to prevail as the wind was to make the traveler part with his cloak, which he only held the tighter. The errors that may be caused by a true hypothesis, or by right principles that are not rightly understood, may be included under this heading of wrong hypotheses. Nothing is more familiar than this.[21] The cases of men contending for different opinions, all of which they derive from the infallible truth of scripture, are undeniable proof of it. All who call themselves Christians agree that the text which says μετανοεῖτε carries in it the obligation to a very weighty duty. But how very mistaken will the practice of someone be who understands nothing but French, if he takes this rule according to one translation to be *repentez vous*, repent, or according to the other, *faites penitence*, do penance![22]

4.20.12 3. *Predominant passions.*—Thirdly, probabilities that cross men's appetites and prevailing passions meet the same fate. Let there be ever so much probability on one side of a greedy man's reasoning, and money on the other: it is easy to foresee which

20 Scarlet was the color of doctoral robes. Locke's word "novelist" meant an innovator, someone who brings in novelties.

21 Aesop's fable of the North Wind and the Sun, in which the wind fails to blow a traveler's cloak off and the sun's warmth makes him take it off.

22 Μετανοεῖτε, "repent" (for example, Matthew 3:2). Protestant French Bibles rendered it one way, Catholic French Bibles the other.

will outweigh. Earthly minds, like mud walls, withstand the heaviest bombardment. Perhaps the force of a clear argument may sometimes make some impression, but they still stand firm and keep out the enemy, truth, which would capture or disturb them. Tell a man who is passionately in love that he has been jilted, and bring a score of witnesses to the falseness of his beloved. It is ten to one that three kind words from her will cancel all their testimony. *Quod volumus, facile credimus*: what suits our wishes is readily believed. I suppose everyone has experienced this more than once. Men cannot always openly deny or resist the force of evident probabilities that tell against them, but they still do not yield to the argument. It is indeed the nature of the understanding always to settle on the more probable side. But a man has the power to suspend and restrain its inquiries, and to refuse to permit a full and satisfactory examination, as far as the matter in question is capable of one and allows it to be made. Until that is done, there will always be these two ways left of evading the most evident probabilities.

4.20.13 *The means of evading probabilities:* 1. *Supposed fallacy.*—First, the arguments are presented in words, as for the most part they are, so there may be a fallacy hidden in them. The inferences may also run in a long chain, so some of them may not hang together. There are very few discourses so short, clear, and consistent that most men cannot raise this doubt against them to their own satisfaction. They can then free themselves from being convinced by them, without being charged with dishonesty or unreasonableness, by means of the old reply, non persuadebis, etiamsi persuaseris: though I cannot answer, I will not yield.

4.20.14 2. *Supposed arguments for the contrary.*—Secondly, evident probabilities may be evaded, and assent withheld, on the suggestion that I do not yet know everything that may be said on the other side. So even if I am beaten, I need not yield, since I do not know what forces are held in reserve behind. This refuge from conviction is so open and so wide that it is hard to determine when a man is entirely outside its bounds.

4.20.15 *What probabilities determine the assent.*—Still, this refuge does have some limit. Suppose a man has carefully inquired into all the grounds of probability and unlikelihood, done his utmost to inform himself fairly about all the particulars, and added up the sum total on both sides. In most cases he may come to acknowledge, on the whole, on which side the probability lies. In such cases some proofs in matters of reason, being suppositions based on universal experience, are so compelling and clear, and some testimonies in matters of fact are so universal, that he cannot refuse his assent. So I think we may conclude as follows. Take propositions in which the proofs in view carry the most weight, but there are still sufficient grounds to suspect either a fallacy in the words or proofs just as considerable that could be produced on the other side. In such propositions, men's assent, suspension, or dissent is often a voluntary action. But take cases where the proofs make the proposition highly probable, and there is no sufficient ground to suspect a fallacy of words (which sober and serious consideration may discover). Nor is there ground to suspect equally valid proofs still undiscovered and hidden on the other side (which the nature of the thing may also, in some cases, make plain to a thoughtful man). There, I think, a man who has weighed the proofs can hardly refuse his assent to the side on which the greater probability appears. Is it probable that a random jumble of printing letters should often fall into a method and order that would stamp a coherent discourse on paper? Or that a blind, chance concourse of atoms, not guided by an understanding agent, should frequently form the bodies of any species of animals? In these and similar cases, I think nobody who considers them can be at all at a loss which side to take, or waver at all in his assent. Lastly, there are cases where the thing is in its own nature indifferent and depends wholly on the testimony of witnesses, and where there can be no supposition that the testimony against the attested matter of fact is as good as the testimony for it. Such a matter of fact is to be learned by inquiry, as, for example, whether there was such a man at Rome as Julius Caesar seven-

teen hundred years ago. In all such cases, I say, I think it is not in any rational man's power to refuse his assent. His assent necessarily follows such probabilities and settles on them. In other, less clear cases, I think it is in a man's power to suspend his assent. He may perhaps content himself with the proofs he has, if they favor the opinion that suits his inclination or interest, and so stop searching further. But that a man should give his assent to the side on which the lesser probability appears to him seems to me utterly impracticable. It is as impossible as believing the same thing probable and improbable at the same time.

4.20.16 *Where it is in our power to suspend it.*—Just as knowledge is no more arbitrary than perception, so, I think, assent is no more in our power than knowledge. When the agreement of any two ideas appears to our minds, whether immediately or with the help of reason, I can no more refuse to perceive it, and no more avoid knowing it, than I can avoid seeing the objects I turn my eyes to and look at in daylight. And I cannot deny my assent to what I find most probable on full examination. Once the agreement is perceived, we cannot prevent our knowledge. When the probability plainly appears on due consideration of all its measures, we cannot prevent our assent. But we can still prevent both knowledge and assent by stopping our inquiry and not employing our faculties in the search for any truth. If it were not so, ignorance, error, or unbelief could never be a fault. So in some cases we can prevent or suspend our assent. But can a man versed in modern or ancient history doubt whether there is such a place as Rome, or whether there was such a man as Julius Caesar? Indeed, there are millions of truths that a man is not concerned to know, or may not think himself concerned to know: for example, whether our King Richard the Third was hunchbacked or not, or whether Roger Bacon was a mathematician or a magician. In these and similar cases, assent one way or the other matters to nobody's interest, and no action or concern of his follows from it or depends on it. There it is not strange that the mind should give itself up to the common opin-

ion, or surrender to the first comer. These and similar opinions are of so little weight and importance that, like motes in a sunbeam, their tendencies are very rarely noticed.[23] They are there by chance, as it were, and the mind lets them float freely. But sometimes the mind judges that the proposition matters. It thinks that assenting or not assenting will bring important consequences after it, and that good and evil depend on choosing or refusing the right side, and it sets itself seriously to inquire into and examine the probability. There, I think, it is not our choice to take whichever side we please, if clear odds appear on either side. In that case, I think, the greater probability will determine the assent. Where a man perceives the greater probability, he can no more avoid assenting, or taking the thing to be true, than he can avoid knowing it to be true where he perceives the agreement or disagreement of any two ideas.

If this is so, the foundation of error will lie in wrong measures of probability, just as the foundation of vice lies in wrong measures of good.

4.20.17 4. *Authority.*—Fourthly, the fourth and last wrong measure of probability I shall notice is the one I mentioned in the previous chapter. It keeps more people in ignorance or error than all the others together. I mean giving up our assent to the commonly received opinions of our friends or party, our neighborhood or country. How many men have no other ground for their tenets than the supposed honesty, learning, or number of those who profess the same! As if honest or bookish men could not err, or truth were to be established by the vote of the multitude. Yet for most men this does the job. The tenet has had the attestation of reverend antiquity; it comes to me with the passport of former ages; and therefore I am safe in receiving it. Other men have been and are of the same opinion (for that is all that is said), and therefore it is reasonable for me to embrace it. A man could more justifiably toss a coin for his opinions than

23 Richard III, King of England 1483–85, was traditionally portrayed as a hunchback. Roger Bacon (c. 1220–c. 1292), the Franciscan philosopher, was popularly remembered as a magician.

adopt them by such measures. All men are liable to error, and on many points most men are tempted to it by passion or interest. If we could only see the secret motives that influenced the men of name and learning in the world, and the leaders of parties, we would not always find that embracing truth for its own sake was what made them adopt the doctrines they professed and maintained. This at least is certain: there is no opinion so absurd that a man may not accept it on this ground. There is no error one could name that has not had its adherents. A man will never lack crooked paths to walk in if he thinks he is on the right road wherever he has the footsteps of others to follow.

4.20.18 *Men not in so many errors as imagined.*—But in spite of all the noise made in the world about errors and opinions, I must do mankind the justice of saying that not as many men hold errors and wrong opinions as is commonly supposed. It is not that I think they embrace the truth. It is that, concerning the doctrines they make such a fuss about, they have no thought and no opinion at all. For suppose someone questioned a little the greater part of the partisans of most of the sects in the world. He would not find that they have any opinions of their own on the matters they are so zealous about. Much less would he have reason to think that they adopted those opinions after examining arguments and the appearance of probability. They are resolved to stick to a party that education or interest has enlisted them in. There, like the common soldiers of an army, they show their courage and ardor as their leaders direct, without ever examining, or even knowing, the cause they are fighting for. If a man's life shows that he has no serious regard for religion, what reason do we have to think that he racks his brains over the opinions of his church, and takes the trouble to examine the grounds of this or that doctrine? It is enough for him to obey his leaders and to have his hand and his tongue ready to support the common cause. In this way he recommends himself to those who can give him standing, promotion, or protection in that society. Thus men come to profess and fight

for opinions they were never convinced of or converted to. Some of these opinions never so much as floated through their heads. One cannot say that there are fewer improbable or erroneous opinions in the world than there are. But it is certain that fewer people actually assent to them, and mistake them for truth, than is imagined.

THE DIVISION OF THE SCIENCES

Knowledge divides into natural philosophy, ethics, and the doctrine of signs.

4.21.1 *Three sorts.*—Everything that can fall within the compass of human understanding is one of three things. First, it may be the nature of things as they are in themselves, their relations, and their manner of operation. Second, it may be what man himself ought to do, as a rational and voluntary agent, to attain any end, especially happiness. Third, it may be the ways and means by which the knowledge of both of these is attained and communicated. So I think science may properly be divided into these three sorts.[24]

4.21.2 1. *Physica.*—First, the knowledge of things as they are in their own proper being, their constitution, properties, and operations. By this I mean not only matter and body but also spirits, which have their own proper natures, constitutions, and operations just as bodies do. This, in a somewhat enlarged sense of the word, I call Φυσική, or natural philosophy. Its end is bare speculative truth. Whatever can afford the mind of man any such truth falls under this branch, whether it is God himself, angels, spirits, bodies, or any of their attributes, such as number and figure, etc.

4.21.3 2. *Practica.*—Secondly, Πρακτική, the skill of rightly applying our own powers and actions to attain things that are good and useful. The most important study under this head is ethics. Ethics seeks out those rules and measures of human actions that

24 "Science" here means organized knowledge in general, not only natural science.

lead to happiness, and the means of practicing them. Its end is not bare speculation and the knowledge of truth, but right, and conduct suited to it.

4.21.4 3. Σημιωτική.—Thirdly, the third branch may be called Σημιωτική, or the doctrine of signs. Since the most usual signs are words, it is also aptly enough called Λογική, logic. Its business is to consider the nature of the signs the mind makes use of for understanding things, or for conveying its knowledge to others. Nothing the mind contemplates, apart from the mind itself, is present to the understanding. So something else must be present to it as a sign or representation of the thing it considers; and these are ideas.[25] The scene of ideas that makes up one man's thoughts cannot be laid open to the direct view of another. Nor can it be stored anywhere but in the memory, which is not a very reliable repository. So signs of our ideas are also necessary, in order to communicate our thoughts to one another and to record them for our own use. The signs men have found most convenient, and therefore generally use, are articulate sounds. Anyone who would take a view of human knowledge in its whole extent must therefore consider ideas and words as the great instruments of knowledge. This is no contemptible part of that study. And perhaps, if they were distinctly weighed and duly considered, they would give us a different sort of logic and criticism from the one we have known so far.

4.21.5 *This is the first division of the objects of knowledge.*—This seems to me the first and most general, as well as the most natural, division of the objects of our understanding. For a man can employ his thoughts on only three things. He can contemplate things themselves, to discover truth. He can think about the things in his power, which are his own actions, to attain his own ends. Or he can think about the signs the mind makes use of in both the one and the other, and the right ordering of them for its clearer information. All three of these, namely, things as they

25 The Greek names are physikē (natural philosophy), praktikē (practice), sēmeiōtikē (the doctrine of signs, the source of the later word "semiotics") and logikē (logic).

are knowable in themselves, actions as they depend on us for the sake of happiness, and the right use of signs for the sake of knowledge, are *toto caelo* different. So they seemed to me to be the three great provinces of the intellectual world, wholly separate and distinct from one another.[26]

26 *Toto caelo*: Latin, "by the whole extent of the sky," that is, utterly.