Prolegomena to Any Future Metaphysics

IMMANUEL KANT
1724–1804

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Prolegomena zu einer jeden künftigen Metaphysik

Translated from the German with AI (Claude) and edited



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Prolegomena to Any Future Metaphysics · Immanuel Kant (1724–1804)

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INTRODUCTION

Kant's *Critique of Pure Reason* (1781) was greeted with incomprehension. Two years later he published the *Prolegomena*, a shorter guide that works backward from what we already know, mathematics and natural science, to the conditions that make such knowledge possible.

Here is the famous confession that David Hume "interrupted my dogmatic slumber." Hume had shown that the idea of cause cannot be derived from experience; Kant's reply is that the mind itself supplies the forms of space and time and the categories, like cause, that make experience possible. The price is that we know things only as they appear to us, never as they are in themselves, and that metaphysics beyond all possible experience is closed to us.

For many readers it is the best way into Kant's theoretical philosophy.

Preface

Kant recalls how Hume woke him from his dogmatic slumber and explains why this short book is needed.

255 These Prolegomena are not for the use of apprentices but of future teachers, and even for them they are not meant to help arrange the presentation of a science that already exists, but to invent this science itself for the very first time.[1]

There are scholars for whom the history of philosophy (ancient as well as modern) is itself their philosophy; the present Prolegomena are not written for them. They must wait until those who strive to draw from the sources of reason itself have settled their business; then it will be their turn to give the world an account of what has taken place. Otherwise nothing can be said that, in their opinion, has not already been said before; and indeed this may well stand as an infallible prediction for everything to come. For since the human understanding has for many centuries indulged in visionary flights about countless objects in all sorts of ways, it can hardly fail that for everything new something old will be found that bears some resemblance to it.

My intention is to convince all those who find it worthwhile to occupy themselves with metaphysics that it is absolutely necessary for them to suspend their work for the time being, to regard everything done so far as undone, and before all else to raise the question: whether such a thing as metaphysics is even possible at all.

1 *Prolegomena*: Greek for "things said beforehand," i.e. preliminary remarks.

If it is a science, how is it that it cannot, like other sciences, win universal and lasting approval? If it is not, how does it come about that it nevertheless constantly gives itself airs under the guise of a science, and strings the human understanding along with hopes that are never extinguished [256] yet never fulfilled? Whether we end up demonstrating our knowledge or our ignorance, then, something certain must at last be settled about the nature of this presumed science; for it cannot possibly remain on its present footing any longer. It seems almost laughable that, while every other science advances without pause, in this one—which claims to be wisdom itself, and whose oracle everyone consults—we keep turning round and round on the same spot without getting a single step further. Its adherents, too, have dwindled considerably, and we do not see those who feel strong enough to shine in other sciences willing to risk their reputation in this one. Here anyone who is ignorant of everything else presumes to pass decisive judgment, because in this land there is in fact still no reliable measure and weight by which to distinguish thoroughness from shallow chatter.

Yet it is not so unheard-of that, after a science has been worked on for a long time and people marvel at how far they have already come in it, someone finally thinks to ask whether and how such a science is possible at all. For human reason is so fond of building that it has more than once raised the tower and afterwards torn it down again, to see how its foundation might actually be laid. It is never too late to become reasonable and wise; but when insight comes late, it is always harder to set it going.

To ask whether a science is actually possible presupposes that one doubts its actuality. But such a doubt offends everyone whose entire possessions may consist in this supposed jewel; and so whoever lets this doubt slip out had better be prepared for resistance from every side. Some, in the proud consciousness of their old possession, which they hold to be legitimate for that very reason, will look down on him with contempt, their metaphysical compendia in hand. Others, who never see any-

thing except what is the same as what they have already seen somewhere else, will not understand him. And for some time everything will remain as if nothing at all had happened that gave cause to fear or to hope for an imminent change.

Nevertheless I venture to predict that the reader of these Prolegomena who thinks for himself will not merely doubt the science he has held so far [257] , but will subsequently be fully convinced that there can be no such thing unless the requirements set out here, on which its possibility rests, are met; and, since this has never yet happened, that there is as yet no metaphysics at all. Yet since the demand for it can never die away either[2], because the interest of universal human reason is far too intimately interwoven with it, he will admit that a complete reform, or rather a rebirth, of metaphysics according to a plan hitherto entirely unknown is inevitably at hand, however much people may resist it for a while.

Since the attempts of *Locke* and *Leibniz*, or rather since the rise of metaphysics as far back as its history reaches, no event has occurred that could have been more decisive for the fate of this science than the attack *David Hume* made on it. He brought no light into this kind of cognition, but he did strike a spark from which a light might well have been kindled, had it caught on receptive tinder whose glow was carefully kept alive and fanned.[3]

Hume started chiefly from a single but important concept of metaphysics, namely that of the *connection of cause and effect* (and hence also its derivative concepts of force, action, etc.). He challenged reason, which claims to have generated this concept in its own womb, to answer to him: by what right does it think that something could be so constituted that, if it is posited,

2 KANT'S NOTE. *Rusticus exspectat, dum defluat amnis; at ille Labitur et labetur in omne volubilis aevum.* [The peasant waits for the river to run dry; but on it glides, and will glide, rolling on for all time.] *Horace.*

TRANSLATOR'S NOTE. Horace, *Epistles* I.2.42–43.

3 John Locke (1632–1704), English empiricist; Gottfried Wilhelm Leibniz (1646–1716), German rationalist; David Hume (1711–1776), Scottish philosopher and historian.

something else must necessarily be posited as well? For that is what the concept of cause says. He proved irrefutably that it is wholly impossible for reason to think such a combination *a priori* and from concepts, for it involves necessity; and it is quite impossible to see how, because something is, something else must necessarily be as well, and hence how the concept of such a connection could be introduced *a priori*. From this he concluded that reason is completely deceived about this concept: it falsely takes it for its own child, whereas it is nothing but an illegitimate [258] child of the imagination, which, impregnated by experience, has brought certain representations under the law of association and passes off a subjective necessity arising from this, namely habit, as an objective necessity based on insight.[4] From this he concluded that reason has no power at all to think such connections, even merely in general, because its concepts would then be mere fictions; and that all its supposedly *a priori* cognitions were nothing but common experiences with a false stamp on them—which is as much as to say that there is no metaphysics at all, and there can be none.[5]

However hasty and mistaken his inference was, it was at least founded on investigation; and this investigation well deserved that the good minds of his time should have joined forces to solve the problem, in the sense in which he posed it, more successfully if possible—from which a complete reform of the science would soon have had to follow.

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4 *A priori*: Latin, "from what comes before"—independent of experience; its opposite, *a posteriori*, means derived from experience.

5 KANT'S NOTE. Yet *Hume* himself called this very destructive philosophy metaphysics and attached great value to it. "Metaphysics and morality," he says (*Essays*, part 4, p. 214, German translation), "are the most important branches of science; mathematics and natural science are not worth half as much." But this acute man was looking here only at the negative benefit that moderating the exaggerated claims of speculative reason would have, in putting an end altogether to so many endless and persecuting quarrels that throw the human race into confusion. In doing so he lost sight of the positive harm that results when reason is deprived of its most important prospects—the only ones by which it can set the will the highest goal of all its endeavors.

TRANSLATOR'S NOTE. Kant cites a mid-eighteenth-century German translation of Hume's essays.

But the fate that has always been unkind to metaphysics would have it that he was understood by no one. One cannot watch without a certain pain how completely his opponents *Reid, Oswald, Beattie,* and finally *Priestley* too missed the point of his problem. They always took for granted precisely what he doubted, and instead proved with vehemence, and mostly with great immodesty, what it had never entered his head to doubt; and so they misjudged his hint toward improvement so badly that everything remained in its old state, as if nothing had happened.[6] The question was not whether the concept of cause is correct, useful, and indispensable with respect to the whole of our cognition of nature, for *Hume* had never called this into doubt. It was whether this concept is thought by reason [259] *a priori,* and so has an inner truth independent of all experience, and hence also a wider usefulness, not restricted merely to objects of experience: this is what *Hume* was waiting to have explained. The issue, after all, was only the origin of this concept, not its indispensability in use. Once the origin had been determined, the conditions of its use and the extent to which it can be valid would have followed of themselves.

To do justice to the problem, however, the famous man's opponents would have had to penetrate very deeply into the nature of reason insofar as it is occupied merely with pure thinking—and this did not suit them. They therefore invented a more convenient means of being defiant without any insight at all: namely, the appeal to *common human understanding*. It is indeed a great gift of heaven to possess a straight (or, as it has recently been called, plain) human understanding. But one must prove it by deeds, by the considered and reasonable things one thinks and says—not by appealing to it as an oracle when one can bring forward nothing clever in one's own defense.[7] To

6 Thomas Reid, James Oswald and James Beattie were Scottish philosophers of "common sense"; Joseph Priestley (1733–1804) was an English chemist and theologian.

7 *Common human understanding* renders Kant's *gemeiner Menschenverstand*; his *gesunder Menschenverstand* is rendered "sound common sense." Both are his names for what the Scottish philosophers called "common sense."

appeal to common human understanding when insight and science are running out, and not before—that is one of the subtle inventions of recent times, by which the emptiest chatterbox can confidently take on the most thorough mind and hold his own against him. But as long as a small remnant of insight remains, one will take care not to seize on this emergency aid. Seen in the light of day, this appeal is nothing but an appeal to the judgment of the crowd—applause at which the philosopher blushes, but in which the popular wit triumphs and struts. But I should have thought that *Hume* could lay claim to sound understanding just as well as *Beattie*—and, in addition, to something the latter certainly did not possess, namely a critical reason, which keeps common understanding within limits, so that it does not climb up into speculations, or, if speculations alone are at issue, does not presume to decide anything, since it does not know how to justify itself about its principles; for only in this way will it remain a sound understanding. Chisel and mallet can serve perfectly well for working a piece of timber, but for copper engraving one must use an etching needle. Thus sound understanding and speculative understanding are both [260] useful, but each in its own way: the former when it comes to judgments that find their immediate application in experience; the latter where judgments are to be made universally, from mere concepts—for example in metaphysics, where what calls itself sound understanding (though often *per antiphrasin* [by antiphrasis, i.e. meaning the opposite]) has no judgment at all.

I freely admit: it was *David Hume*'s reminder that, many years ago, first interrupted my dogmatic slumber and gave my investigations in the field of speculative philosophy an entirely different direction. I was far from listening to him with regard to his conclusions, which arose merely because he did not picture his problem as a whole but fell on only one part of it—and a part can give no information without taking the whole into account. When we start from a well-founded, though undeveloped, thought that someone else has left us, we may well hope, by con-

tinued reflection, to take it further than the acute man got to whom we owed the first spark of this light.

I therefore first tried whether *Hume's* objection could not be represented universally, and I soon found that the concept of the connection of cause and effect is far from being the only one by which the understanding thinks connections of things *a priori*; rather, metaphysics consists entirely of such concepts. I sought to make sure of their number, and when I had succeeded in this as I wished, namely from a single principle, I proceeded to the deduction of these concepts. I was now assured that they are not derived from experience, as *Hume* had feared, but have sprung from the pure understanding. This deduction, which seemed impossible to my acute predecessor, and which had never even occurred to anyone but him—although everyone confidently used these concepts without asking what their objective validity is based on—this deduction, I say, was the most difficult thing that could ever be undertaken on behalf of metaphysics. And what is worst of all, metaphysics, as much of it as exists anywhere, could not give me the slightest help here, because that deduction is supposed to establish the possibility of a metaphysics in the first place. Now since I had succeeded in solving Hume's problem not merely in one particular case but with respect to the whole faculty of pure reason, I [261] could take sure, though always slow, steps toward finally determining the whole compass of pure reason, in its boundaries as well as its content, completely and according to universal principles. And this was just what metaphysics needs in order to build its system on a secure plan.

But I fear that the *working out* of Hume's problem in its greatest possible extension (namely the *Critique of Pure Reason*) may fare just as the *problem* itself fared when it was first posed. It will be judged wrongly because it is not understood; it will not be understood because people are willing to leaf through the book but not to think it through; and they will not want to spend this effort on it because the work is dry, because it is obscure, because it contradicts all familiar concepts, and moreover

because it is long-winded.[8] Now I confess that I did not expect to hear complaints from a philosopher about a lack of popularity, entertainment, and ease when what is at stake is the very existence of a cognition that is highly prized and indispensable to humanity—a cognition that cannot be settled except according to the strictest rules of scholastic precision. Popularity may indeed follow on this in time, but it must never come first. As for a certain obscurity, however, which arises partly from the breadth of the plan, which makes it hard to survey the main points on which the investigation turns: here the complaint is just, and I will remedy it with the present *Prolegomena*.

That work, which presents the faculty of pure reason in its entire compass and boundaries, always remains the foundation, to which the Prolegomena relate only as preliminary exercises. For that critique must stand complete as a science, systematically and down to its smallest parts, before one can even think of letting metaphysics come forward, or even of forming a distant hope of it.

We have long been accustomed to seeing old, worn-out cognitions dressed up as new by being taken out of their former connections and fitted with a systematic garment cut to someone's own fancy, but under new titles; and most readers will expect nothing else from that critique in advance. But these Prolegomena will bring the reader to see [262] that it is an entirely new science, of which no one had even conceived the thought before, whose very idea was unknown, and for which nothing provided so far could be used except the hint that *Hume's* doubts could give. He too had no inkling of any such possible formal science; instead, to bring his ship to safety, he ran it aground on the shore (of skepticism), where it may lie and rot. What matters to me, by contrast, is to give it a pilot who, following secure principles of navigation drawn from knowledge of the globe, and equipped with a complete sea chart and a compass, can steer the ship safely wherever he sees fit.

8 Kant's *Critique of Pure Reason* (1781); the *Prolegomena* (1783) restates its main argument in shorter form.

To approach a new science—one that is entirely isolated and the only one of its kind—with the prejudice that one can judge it by means of supposed knowledge acquired elsewhere, even though it is precisely the reality of that knowledge that must first be thoroughly doubted, achieves nothing except that one believes one sees everywhere what one already knew, perhaps because the expressions sound similar. Only everything is bound to seem utterly distorted, absurd, and gibberish, because one bases it not on the author's thoughts but always only on one's own way of thinking, which long habit has turned into second nature. But the length of the work, insofar as it is grounded in the science itself and not in the presentation, and the dryness and scholastic precision that are unavoidable with it, are qualities that may be extremely advantageous to the subject itself but are certainly bound to be detrimental to the book.

It is not given to everyone, of course, to write as subtly and at the same time as engagingly as *David Hume*, or as thoroughly and yet as elegantly as *Moses Mendelssohn*. But I could well have given my presentation popularity (so I flatter myself) if all I had cared about was sketching a plan and recommending its execution to others, and if the welfare of the science that had kept me busy for so long had not been close to my heart. For, incidentally, it took a great deal of perseverance, and not a little self-denial too, to put the lure of an earlier, favorable reception behind the prospect of an approval that would come late but last.[9]

Making plans is often a lavish, boastful occupation of the mind, by which one gives oneself the air of a creative genius [263] —demanding what one cannot deliver oneself, criticizing what one cannot do better oneself, and proposing what one does not oneself know where to find. And yet even a competent plan for a general critique of reason would have required somewhat more than one might suppose, if it was not to become, as usual, a mere declamation of pious wishes. But pure reason is a sphere

9 Moses Mendelssohn (1729–1786), German-Jewish Enlightenment philosopher, admired for his prose style.

so separate, and so thoroughly interconnected within itself, that one cannot touch any part of it without affecting all the others, and can accomplish nothing without first having determined each part's place and its influence on the others. For since there is nothing outside reason that could correct our judgment within it, the validity and use of each part depend on the relation in which it stands to the others within reason itself; and, as with the structure of an organized body, the purpose of each member can be derived only from the complete concept of the whole. Hence one can say of such a critique that it is never reliable unless it is *entire* and *completed* down to the least elements of pure reason, and that in the sphere of this faculty one must determine and settle either *everything* or *nothing*.

But though a mere plan that came before the critique of pure reason would be unintelligible, unreliable, and useless, it is all the more useful when it comes afterward. For it enables one to survey the whole, to test piece by piece the main points on which this science turns, and to arrange many things better in the presentation than could be done in the first draft of the work.

Here, then, is such a plan, following the completed work. It may now be laid out according to the *analytic method*, whereas the work itself had to be composed throughout in the *synthetic manner of teaching*, so that the science might set before our eyes all its articulations, as the organic structure of a quite distinctive faculty of cognition, in their natural combination. Anyone who finds this plan, which I send ahead as prolegomena to all future metaphysics, obscure in its turn may consider: that it is not at all necessary for everyone to study metaphysics; that there are many talents that do quite well in thorough and even deep sciences that come closer to intuition, but for whom inquiries conducted through purely abstract concepts will not [264] succeed; and that in such a case one should apply one's mental gifts to another object; that, on the other hand, anyone who undertakes to judge metaphysics, or even to write one, must fully satisfy the demands made here, whether by accepting my solution or by

thoroughly refuting it and putting another in its place—for he cannot simply dismiss it; and finally, that the much-decried obscurity (a customary cloak for one's own indolence or dim-sightedness) has its use as well. For all those who observe a cautious silence with respect to every other science speak masterfully and decide boldly in questions of metaphysics, because here their ignorance does not, to be sure, stand out clearly against other people's science—but it does against genuine critical principles, of which one can therefore boast: *ignavum, fucos, pecus a praesepibus arcent* [they keep the drones, a lazy herd, away from the hives]. *Virgil*.[10]

10 Virgil, *Georgics* IV.168, on bees defending their hive.

Preamble: What is special about metaphysical knowledge

Kant distinguishes analytic from synthetic judgments and asks how synthetic a priori judgments are possible.

§ 1. ON THE SOURCES OF METAPHYSICS

Kant argues that metaphysical cognition cannot come from experience: it is cognition a priori.

[265] If one wishes to present a cognition as *science*, one must first be able to determine precisely what distinguishes it—what it has in common with no other, and what is therefore *peculiar* to it. Otherwise the boundaries of all sciences run into one another, and none of them can be treated thoroughly according to its nature.

Whether this peculiarity consists in a difference of *object*, or of *sources of cognition*, or of *kind of cognition*, or of several if not all of these together, the idea of the possible science and its territory rests first of all on it.

First, as regards the *sources* of a metaphysical cognition, it already lies in its very concept that they cannot be empirical. Its principles (which include not only its fundamental propositions but also its fundamental concepts) must therefore never be taken from experience: for it is to be not physical but metaphysical cognition, that is, cognition lying beyond experience. Thus neither outer experience, which is the source of physics proper, nor inner experience, which forms the basis of empirical psychology, will lie at its [266] foundation. It is therefore cognition *a priori*, or cognition from pure understanding and pure reason.

In this, however, it would have nothing to distinguish it from pure mathematics; it will therefore have to be called *pure philosophical cognition*. For the meaning of this expression I refer to the *Critique of Pure Reason*, p. 712 ff., where the difference between these two kinds of use of reason is set out clearly and satisfactorily.—So much for the sources of metaphysical cognition.[1]

§ 2. ON THE KIND OF COGNITION THAT ALONE CAN BE CALLED METAPHYSICAL

(a) Kant distinguishes analytic judgments, which merely explicate a concept, from synthetic judgments, which extend it.

Metaphysical cognition must contain nothing but judgments *a priori*; this is required by what is peculiar to its sources. But whatever origin judgments may have, and whatever their logical form, there is nevertheless a distinction between them according to their content, by virtue of which they are either merely *explicative*, adding nothing to the content of the cognition, or *ampliative*, enlarging the given cognition. The former may be called *analytic*, the latter *synthetic* judgments.

Analytic judgments say nothing in the predicate but what was already actually thought in the concept of the subject, though not so clearly or with the same consciousness. If I say, "All bodies are extended," I have not enlarged my concept of body in the least but only analyzed it, since extension was actually thought in that concept before the judgment, even though it was not explicitly stated; the judgment is therefore analytic. By contrast, the proposition "Some bodies are heavy" contains something in the predicate that is not actually thought in the universal concept of body; it therefore enlarges my cognition [267] by adding something to my concept, and must therefore be called a synthetic judgment.

1 Kant's page references are to the first edition of the *Critique* (1781).

(B) THE COMMON PRINCIPLE OF ALL ANALYTIC JUDGMENTS IS THE PRINCIPLE OF CONTRADICTION

All analytic judgments rest on the principle of contradiction and are therefore a priori.

All analytic judgments rest entirely on the principle of contradiction and are by their nature cognitions *a priori*, whether or not the concepts that serve as their matter are empirical. For since the predicate of an affirmative analytic judgment is already thought beforehand in the concept of the subject, it cannot be denied of the subject without contradiction. In the same way, in an analytic but negative judgment, its opposite is necessarily denied of the subject—and this too in accordance with the principle of contradiction. Such is the case with the propositions "Every body is extended" and "No body is unextended (simple)."

For this very reason all analytic propositions are also judgments *a priori*, even if their concepts are empirical—for example, "Gold is a yellow metal." To know this I need no further experience beyond my concept of gold, which contained that this body is yellow and a metal; for that is precisely what made up my concept, and I had only to analyze it, without looking around for anything else outside it.

(C) SYNTHETIC JUDGMENTS REQUIRE A PRINCIPLE OTHER THAN THE PRINCIPLE OF CONTRADICTION

Kant sorts synthetic judgments and argues that all mathematical judgments are synthetic.

There are synthetic judgments *a posteriori*, whose origin is empirical; but there are also some that are certain *a priori* and that spring from pure understanding and reason. Both, however, agree in this: that they can never arise from the principle of analysis, namely the principle of contradiction, alone. They require an entirely different principle—although, whatever principle they are derived from, they must always be derived in con-

formity with the *principle of contradiction*; for nothing may run counter to this principle, even though not everything can be derived from it. I will first sort synthetic judgments into classes.

[268] 1) *Judgments of experience* are always synthetic. For it would be absurd to ground an analytic judgment on experience, since I do not need to go outside my concept at all in order to frame the judgment, and so need no testimony from experience for it. That a body is extended is a proposition that holds *a priori*, not a judgment of experience. For before I go to experience, I already have all the conditions for my judgment in the concept, from which I need only extract the predicate according to the principle of contradiction, thereby becoming conscious at the same time of the *necessity* of the judgment—which experience would never even teach me.

2) *Mathematical judgments* are all synthetic. This proposition seems to have entirely escaped the notice of those who have analyzed human reason up to now—indeed, to be directly opposed to all their conjectures—although it is irrefutably certain and very important in its consequences. For because people found that the inferences of mathematicians all proceed according to the principle of contradiction (as the nature of any apodictic certainty requires), they persuaded themselves that the principles too were cognized from the principle of contradiction. In this they were very much mistaken. For a synthetic proposition can indeed be grasped according to the principle of contradiction, but only by presupposing another synthetic proposition from which it can be inferred—never in itself.[2]

First of all it must be noted that mathematical propositions proper are always judgments *a priori* and not empirical, because they carry necessity with them, which cannot be taken from experience. But if this is not granted me—very well, I will restrict my proposition to *pure mathematics*, whose very concept implies that it contains not empirical but only pure cognition *a priori*.

At first one might well think that the proposition 7 + 5 = 12 is a merely analytic proposition that follows from the concept of a sum of seven and five according to the principle of contradiction. But on closer inspection one finds that the concept of the sum of 7 and 5 contains nothing more than the union of both numbers into a single one, and this in no way thinks what that single number is which comprises both. The concept of twelve is by no means already thought merely by my thinking that union of seven and five; and however long [269] I analyze my concept of such a possible sum, I will still not find twelve in it. One must go beyond these concepts, calling on the help of the intuition that corresponds to one of the two—one's five fingers, say, or (as *Segner* does in his arithmetic) five points—and so add, one by one, the units of the five given in intuition to the concept of seven. One thus really enlarges one's concept by this proposition 7 + 5 = 12, and adds to the first concept a new one that was not thought in it at all; that is,[3] an arithmetical proposition is always synthetic. This becomes all the clearer if one takes somewhat larger numbers; for then it is plainly evident that, however we might turn and twist our concepts, we could never find the sum by means of the mere analysis of our concepts, without calling on intuition for help.

Just as little is any principle of pure geometry analytic. That the straight line between two points is the shortest is a synthetic proposition. For my concept of straight contains nothing of magnitude, but only a quality. The concept of the shortest is therefore wholly added and cannot be extracted by any analysis from the concept of a straight line. Intuition must therefore be called on for help here, by means of which alone the synthesis is possible.

Some other fundamental propositions that geometers presuppose are indeed actually analytic and rest on the principle of contradiction; but, like identical propositions, they serve only

2 *Apodictic*: necessarily certain, admitting no possibility of the opposite.
3 Johann Andreas von Segner (1704–1777), German mathematician and physicist, author of an arithmetic textbook.

as links in the chain of method, not as principles—for example a = a, the whole is equal to itself, or (a + b) > a, that is, the whole is greater than its part. And yet even these, although they are valid according to mere concepts, are admitted in mathematics only because they can be presented in intuition. What commonly makes us believe here that the predicate of such apodictic judgments already lies in our concept, and that the judgment is therefore analytic, is merely the ambiguity of the expression. For we *are to* think a certain predicate in addition to a given concept, and this necessity already attaches to the concepts. But the question is not what we *ought to think* in addition to the given concept, but what we *actually think* in it, even if only obscurely; and then it turns out that the predicate does attach to that concept necessarily, but not immediately—only by means of an intuition that must be added.

§ 3. REMARK ON THE GENERAL DIVISION OF JUDGMENTS INTO ANALYTIC AND SYNTHETIC

Kant explains why dogmatic philosophers neglected this division, and finds a hint of it in Locke.

270 This division is indispensable for the critique of the human understanding and therefore deserves to be *classical* in it; otherwise I am not aware that it has any considerable use anywhere else. And here I also find the reason why dogmatic philosophers—who always sought the sources of metaphysical judgments only in metaphysics itself, and not outside it, in the pure laws of reason in general—neglected this division, which seems to offer itself of its own accord, and how, like the famous *Wolff*, or the acute *Baumgarten* who followed in his footsteps, they could seek the proof of the principle of sufficient reason, which is plainly synthetic, in the principle of contradiction. By contrast, I already find a hint of this division in *Locke's Essay concerning Human Understanding*.[4] For in the fourth book, third chapter, § 9

4 Christian Wolff (1679–1754) and Alexander Gottlieb Baumgarten (1714–1762), the leading German rationalist metaphysicians; Locke's *Essay* appeared in 1690.

ff., after he had already spoken of the various connections of representations in judgments and their sources—placing one of them in identity or contradiction (analytic judgments) and the other in the existence of representations in a subject (synthetic judgments)—he admits in § 10 that our cognition (*a priori*) of the latter is very narrow and almost nothing at all. But what he says about this kind of cognition has so little that is determinate and reduced to rules that it is no wonder no one, and in particular not even *Hume,* took occasion from it to reflect on propositions of this kind. For such universal and yet determinate principles are not easily learned from others to whom they have only obscurely occurred. One must first have arrived at them oneself through one's own reflection; afterwards one finds them elsewhere too, where one would certainly not have come across them first, because the authors themselves did not even know that such an idea underlay their own observations. Those who never think for themselves nevertheless possess the sharpsightedness to spy out everything, once it has been shown to them, in what has been said before—where no one could see it previously.

The general question: Is metaphysics possible at all?

Kant sets out his analytic method, starting from sciences we already have.

§ 4. NO METAPHYSICS HAS YET PROVED ITSELF

No book of metaphysics commands lasting assent; its failures bred skepticism, and Hume misjudged mathematics.

271 If a metaphysics that could assert itself as science were actual —if one could say, "Here is metaphysics; you need only learn it, and it will convince you irresistibly and unalterably of its truth"—then this question would be unnecessary. There would remain only the question that concerns a test of our acuteness rather than proof of the existence of the thing itself: namely, *how it is possible*, and how reason sets about attaining it. Now human reason has not been so fortunate in this case. One cannot point to a single book, as one might show a Euclid, and say: this is metaphysics; here you will find the chief purpose of this science, the cognition of a supreme being and of a future world, proven from principles of pure reason.[1] For we can indeed be shown many propositions that are apodictically certain and have never been disputed; but these are all analytic and concern the materials and building supplies for metaphysics rather than the extension of cognition, which is supposed to be our real purpose with it (§ 2, *litt. c* [letter c]). But even if you also produce synthetic propositions (for example the principle of sufficient

1 Euclid (fl. c. 300 BC), Greek mathematician whose *Elements* was the standard textbook of geometry.

reason) which you have never proven from mere reason, and hence *a priori*, as was after all your duty, but which people gladly grant you, you still fall, as soon as you try to use them for your main purpose, into assertions so inadmissible and uncertain that at all times one metaphysics has contradicted another, either in its assertions themselves or in their proofs, and has thereby destroyed its own claim to lasting approval. Indeed, the attempts to bring such a science about were undoubtedly the first cause of the skepticism that arose so early—a way of thinking in which reason proceeds so violently against itself that it could never have arisen except in complete despair of satisfying reason with regard to its most important aims. For long before people began to question nature methodically, they questioned [272] only their own isolated reason, which was already practiced to a certain degree through common experience—since reason is always present to us, whereas laws of nature usually have to be tracked down laboriously. And so metaphysics floated on top like foam, but in such a way that as soon as the foam that had been skimmed off dissolved, another immediately appeared on the surface. Some people always gathered this up eagerly, while others, instead of seeking the cause of this appearance in the depths, thought themselves wise for laughing at the futile efforts of the former.

What is essential to pure *mathematical* cognition, and distinguishes it from all other cognition *a priori*, is that it must proceed *not from concepts* at all, but always only through the construction of concepts (*Critique*, p. 713). Since in its propositions it must therefore go beyond the concept to what the intuition corresponding to it contains, its propositions can never and should never arise through the analysis of concepts, that is, analytically; and so they are all synthetic.[2]

I cannot help noting, however, the harm that neglect of this otherwise easy and seemingly insignificant observation has

2 This paragraph and those that follow, down to "the essential content of metaphysics," continue the argument of § 2; since Hans Vaihinger (1879), scholars have held that they were misplaced here when the first edition was printed.

done to philosophy. When *Hume* felt the calling, worthy of a philosopher, to cast his gaze over the whole field of pure cognition *a priori*, in which the human understanding claims such great possessions, he thoughtlessly cut off from it an entire province—indeed its most important one—namely pure mathematics, imagining that its nature and, so to speak, its constitution rested on entirely different principles, namely solely on the principle of contradiction. And although he had not made the division of propositions as formally and universally as I do here, or under the same name, it was exactly as if he had said: pure mathematics contains merely *analytic* propositions, but metaphysics contains synthetic propositions *a priori*. Now in this he was very much mistaken, and this mistake had decisively harmful consequences for his entire concept. For had he not made it, he would have extended his question about the origin of our synthetic judgments far beyond his metaphysical concept of causality, and stretched it to cover the possibility of mathematics *a priori* as well; for he would have had to take mathematics to be synthetic [273] too. But then he could by no means have grounded his metaphysical propositions on mere experience, since he would otherwise have subjected the axioms of pure mathematics to experience as well—and he had far too much insight to do that. The good company in which metaphysics would then have found itself would have protected it against the danger of contemptuous mistreatment; for the blows intended for metaphysics would have had to strike mathematics as well, which was not, and could not have been, his intention. And so this acute man would have been drawn into reflections that would have had to resemble those with which we are now occupied—but which would have gained infinitely from his inimitably beautiful presentation.

Judgments that are *properly metaphysical* are all synthetic. One must distinguish judgments belonging to *metaphysics* from properly *metaphysical* judgments. Among the former very many are analytic, but they are only the means to metaphysical judgments, at which the purpose of the science is wholly aimed and

which are always synthetic. For if concepts belong to metaphysics—for example, that of substance—then the judgments that arise from the mere analysis of them necessarily belong to metaphysics as well, for example: substance is that which exists only as subject, etc.; and by means of several such analytic judgments we try to come close to the definition of the concepts. But the analysis of a pure concept of the understanding (such as metaphysics contains) proceeds in no other way than the analysis of any other concept, even an empirical one that does not belong to metaphysics (for example: air is an elastic fluid whose elasticity is not removed by any known degree of cold). So it is the concept, but not the analytic judgment, that is peculiarly metaphysical. For this science has something special and peculiar to itself in the production of its cognitions *a priori*, which must therefore be distinguished from what it has in common with all other cognitions of the understanding. Thus, for example, the proposition "Everything that is substance in things is permanent" is a synthetic and peculiarly metaphysical proposition.

Once the concepts *a priori* that make up the matter of metaphysics and its building supplies have been collected according to certain principles, the analysis of these concepts is of great value. It can also be presented as a separate part (as it were, a *philosophia definitiva* [philosophy of definitions]), containing nothing but analytic propositions belonging to metaphysics, apart from all [274] the synthetic propositions that make up metaphysics itself. For in fact these analyses are of considerable use nowhere else but in metaphysics, that is, with a view to the synthetic propositions that are to be generated from the concepts first analyzed.

The conclusion of this section, then, is that metaphysics is properly concerned with synthetic propositions *a priori*, and that these alone constitute its purpose. For this it does indeed need many analyses of its concepts, and hence analytic judgments, but the procedure there is no different from that in every other kind of cognition, where one seeks merely to make one's

concepts distinct by analysis. But the *generation* of cognition *a priori*, as regards both intuition and concepts, and finally of synthetic propositions *a priori* as well, specifically in philosophical cognition, makes up the essential content of metaphysics.

We are weary, then, of dogmatism, which teaches us nothing, and equally of skepticism, which promises us nothing whatever —not even the repose of a permissible ignorance. We are spurred on by the importance of the cognition we need, and made distrustful by long experience of every cognition we believe we possess, or that offers itself to us under the title of pure reason. Only one critical question remains to us, and by its answer we can arrange our future conduct: *Is metaphysics possible at all?* But this question must be answered not through skeptical objections to particular assertions of some actual metaphysics (for as yet we accept none as valid), but from the still merely *problematic* concept of such a science.

In the *Critique of Pure Reason* I went to work on this question synthetically: that is, I inquired into pure reason itself and sought to determine, in this very source, both its elements and the laws of its pure use, according to principles. This work is difficult. It requires a resolute reader, willing to think his way gradually into a system that lays nothing at its foundation as given except reason itself, and that therefore tries to develop cognition from its original seeds without relying on any fact. *Prolegomena,* by contrast, are meant to be preparatory exercises. They are meant to indicate what must be done to bring a science into actuality, if possible, rather than to present the science itself. They [275] must therefore rely on something already known to be reliable, from which one can set out with confidence and ascend to the sources not yet known. The discovery of these sources will not only explain what we already knew, but will also display a whole range of cognitions that all spring from those same sources. The method of prolegomena, especially of those meant to prepare for a future metaphysics, will therefore be *analytic*.

Fortunately, however, although we cannot assume that metaphysics as a science is *actual*, we can say with confidence that certain pure synthetic cognition *a priori* is actual and given—namely, *pure mathematics* and *pure natural science*. For both contain propositions that are universally acknowledged: some as apodictically certain through mere reason, others through general agreement from experience, and yet as independent of experience. So we have at least some *uncontested* synthetic cognition *a priori*. We need not ask whether it is possible (for it is actual), but only *how it is possible*, so that from the principle of the possibility of the given cognition we may derive the possibility of all the rest as well.

§ 5. GENERAL QUESTION: HOW IS COGNITION FROM PURE REASON POSSIBLE?

Since synthetic cognition a priori actually exists, Kant asks how it is possible.

We saw above the enormous difference between analytic and synthetic judgments. The possibility of analytic propositions could be grasped very easily, for it rests solely on the principle of contradiction. The possibility of synthetic propositions *a posteriori*, i.e., of those drawn from experience, needs no special explanation either; for experience is itself nothing other than a continual joining-together (synthesis) of perceptions. We are left, then, only with synthetic propositions *a priori*, whose possibility must be sought or investigated, because it must rest on principles other than the principle of contradiction.

[276] Here, however, we must not begin by seeking *the possibility* of such propositions, that is, by asking whether they are possible. For there are enough of them actually given, and with indisputable certainty. And since the method we are now following is to be analytic, we will start from the fact that such synthetic but pure rational cognition is actual. But then we must nevertheless *investigate* the ground of this possibility and ask *how* this cognition is possible, so that from the principles of its possibility we are put in a position to determine the conditions

of its use, and its scope and boundaries. The real problem, then, on which everything depends, expressed with scholastic precision, is this:

HOW ARE SYNTHETIC PROPOSITIONS A PRIORI POSSIBLE?

Kant states the question on which the standing or falling of metaphysics wholly depends.

Above, for the sake of popularity, I expressed it somewhat differently, namely as a question about cognition from pure reason. I could well do so this time without detriment to the insight we are seeking. Since our concern here is solely with metaphysics and its sources, the reader will, I hope, after the reminders already given, always remember that when we speak here of cognition from pure reason, we never mean analytic cognition, but solely synthetic.[3]

On the solution of this problem, then, the standing or falling of metaphysics—and so its very existence—entirely depends. Someone may present his assertions in it with ever so much plausibility and heap up inferences [277] upon inferences until they crush us; if he has not first been able to answer that question satisfactorily, I am entitled to say: it is all vain, groundless philosophy and false wisdom. You speak through pure reason and presume, as it were, to create cognitions *a priori*, not merely by analyzing given concepts but by alleging new connections that do not rest on the principle of contradiction, and that you

3 KANT'S NOTE. As cognition gradually advances, it is impossible to prevent certain expressions that have already become classic, dating from the infancy of a science, from later being found insufficient and ill-fitting, or to prevent a certain new and more appropriate usage from running some risk of being confused with the old. Analytic method, insofar as it is opposed to synthetic, is something entirely different from a collection of analytic propositions. It means only that one starts from what is sought, as if it were given, and ascends to the conditions under which alone it is possible. In this method one often uses nothing but synthetic propositions, as mathematical analysis exemplifies; it might better be called the *regressive* method, to distinguish it from the synthetic or *progressive* one. The name Analytic also occurs as a principal part of logic; there it is the logic of truth and is opposed to dialectic, without any real regard to whether the cognitions belonging to it are analytic or synthetic.

nevertheless imagine you grasp entirely independently of all experience. How do you arrive at this, and how will you justify such pretensions? You cannot be permitted to appeal to the assent of universal human reason; for that is a witness whose authority rests only on public rumor.

Quodcumque ostendis mihi sic, incredulus odi. [Whatever you show me in this way, I disbelieve and detest.] Horace.[4]

But however indispensable the answer to this question is, it is equally difficult. The chief reason no one has long since tried to answer it is that it never even occurred to anyone that such a thing could be asked. But there is a second reason: a satisfactory answer to this one question demands far more sustained, deeper, and more laborious reflection than the most voluminous work of metaphysics that ever promised its author immortality on its first appearance. Moreover, every perceptive reader who carefully thinks this problem through in terms of what it demands must at first be dismayed by its difficulty and regard it as insoluble—and, were there not actually such pure synthetic cognitions *a priori*, as altogether impossible. This is what actually happened to *David Hume*, although he was far from conceiving the question in such generality as it is conceived here, and must be, if the answer is to be decisive for all of metaphysics. For how is it possible, said that acute man, that when a concept is given to me I can go beyond it and connect with it another concept that is not contained in it at all—and do so as if the latter *necessarily* belonged to the former? Only experience can furnish us with such connections (so he concluded from that difficulty, which he took for impossibility), and all that supposed necessity —or, what comes to the same thing, the cognition *a priori* taken for it—is nothing but a long habit of finding something true, and hence of taking subjective necessity for objective.

If the reader complains of the trouble and toil I am going to cause him [278] by solving this problem, he need only try to solve it himself in an easier way. Perhaps he will then consider himself obliged to the one who undertook a labor of such deep research

4 Horace, *Ars Poetica* 188, on stage spectacles that strain belief.

on his behalf, and may rather show some surprise at how easy the solution could still be made, given the nature of the matter. It has cost years of effort, too, to solve this problem in its full generality (in the sense in which mathematicians take the word, namely as sufficient for all cases), and finally to be able to present it in analytic form, as the reader will find it here.

All metaphysicians are therefore solemnly and lawfully suspended from their business until they have satisfactorily answered the question: *How are synthetic cognitions a priori possible?* For in this answer alone consist the credentials they would have to show if they have anything to put before us in the name of pure reason. Without these credentials they can expect nothing but to be turned away, with no further examination of their proposal, by reasonable people who have been deceived so often already.

If, on the other hand, they wished to carry on their business not as a *science* but as an *art* of salutary persuasions suited to universal human understanding, they cannot in fairness be denied this trade. They will then speak the modest language of a rational faith. They will admit that they are not permitted even to *conjecture,* let alone to *know,* anything about what lies beyond the boundaries of all possible experience, but only to *assume* something (not for speculative use, which they must renounce, but solely for practical use) that is possible and even indispensable for guiding the understanding and the will in life. Only in this way will they be able to bear the name of useful and wise men—and all the more so, the more they renounce the name of metaphysicians. For metaphysicians want to be speculative philosophers; and since, where judgments *a priori* are concerned, nothing can be staked on flimsy probabilities (for what is alleged to be cognized *a priori* is thereby announced as necessary), they cannot be permitted to play with conjectures; [279] rather, their assertion must be science, or it is nothing at all.

One can say that the whole of transcendental philosophy, which necessarily precedes all metaphysics, is itself nothing other than the complete solution of the question posed here,

only in systematic order and detail; and so we have had no transcendental philosophy up to now. For what goes by that name is really a part of metaphysics, whereas that science is supposed first to establish the possibility of metaphysics and must therefore precede all metaphysics. An entire science is needed, then, just to answer a single question adequately—a science deprived of all help from others, and therefore wholly new in itself. So we should not be surprised if the solution of that question involves effort and difficulty, and even some obscurity.

As we now proceed to this solution, and do so by the analytic method, in which we presuppose that such cognitions from pure reason are actual, we can appeal to only two *sciences* of theoretical cognition (the only kind under discussion here): namely, *pure mathematics* and *pure natural science*. For only these can present objects to us in intuition, and hence, if a cognition *a priori* should occur in them, can show its truth or agreement with the object *in concreto*, i.e., *its actuality*. From this actuality one could then proceed along the analytic path to the ground of its possibility.[5] This makes the business much easier, since here the general considerations are not merely applied to facts but actually start from them, whereas in the synthetic procedure they must be derived wholly *in abstracto* from concepts.

But in order to rise from these actual and at the same time well-founded pure cognitions *a priori* to a possible cognition that we are seeking—namely, a metaphysics as science—we need to include under our main question also what occasions metaphysics and underlies it as a merely naturally given cognition *a priori* (though one not above suspicion as to its truth), whose elaboration, without any critical investigation of its possibility, is ordinarily already called metaphysics: in a word, the natural predisposition to such a science. [280] And so the main transcendental question will be divided into four other questions and answered step by step.

1) *How is pure mathematics possible?*

5 *In concreto* (Latin): "in the concrete," in an actual instance; its opposite, *in abstracto*, follows in the next paragraph.

2) *How is pure natural science possible?*

3) *How is metaphysics in general possible?*

4) *How is metaphysics as science possible?*

One sees that, although the solution of these problems is mainly meant to present the essential content of the *Critique*, it nevertheless also has something distinctive, worthy of attention even for its own sake: namely, to seek the sources of given sciences in reason itself, and thereby to explore and measure, by means of the deed itself, reason's capacity to cognize something *a priori*. In this way these sciences themselves gain—if not with respect to their content, then with respect to their correct use—and in helping to shed light on a higher question concerning their common origin, they at the same time give occasion for better clarifying their own nature.

Part One: How is pure mathematics possible?

Mathematics rests on pure intuitions of space and time.

§ 6. MATHEMATICS AS SYNTHETIC COGNITION A PRIORI

Kant asks how reason can produce apodictic, synthetic mathematical cognition entirely a priori.

Here, then, is a great and proven body of cognition, already of admirable extent and promising unlimited expansion in the future. It carries with it thoroughly apodictic certainty, i.e., absolute necessity, and so rests on no grounds of experience; it is therefore a pure product of reason—and, moreover, it is thoroughly synthetic. "How, then, is it possible for human reason to bring about such a cognition entirely *a priori*?" Since this capacity does not and cannot rest on experiences, does it not presuppose some ground of cognition *a priori* that lies deeply hidden, but that might reveal itself through these its effects if one only diligently traced their first beginnings?

§ 7. MATHEMATICS RESTS ON PURE INTUITION

Mathematics must present its concepts in pure intuition, the first condition of its possibility.

[281] But we find that all mathematical cognition has this distinctive feature: it must first present its concept *in intuition*, and indeed *a priori*—hence in an intuition that is not empirical but pure. Without this means it cannot take a single step. Its judgments are therefore always *intuitive*, whereas philosophy must

content itself with *discursive* judgments *from mere concepts*, and can indeed illustrate its apodictic doctrines through intuition, but can never derive them from it. This observation about the nature of mathematics already gives us a clue to the first and highest condition of its possibility: namely, it must be grounded in some *pure intuition*, in which it can present all its concepts *in concreto* and yet *a priori*—or, as it is called, *construct* them.[1] If we can discover this pure intuition and its possibility, it will easily be explained from this how synthetic propositions *a priori* are possible in pure mathematics, and hence also how this science itself is possible. For just as empirical intuition makes it possible without difficulty for us to enlarge synthetically in experience the concept we form of an object of intuition, through new predicates that intuition itself supplies, so pure intuition will do the same. There is only this difference: in the latter case the synthetic judgment will be certain *a priori* and apodictically, in the former only *a posteriori* and empirically. For empirical intuition contains only what is encountered in contingent empirical intuition, whereas pure intuition contains what must necessarily be encountered in pure intuition, since, as intuition *a priori*, it is inseparably bound up with the concept *prior to all experience* or individual perception.

§ 8. HOW CAN ANYTHING BE INTUITED A PRIORI?

Kant asks how an intuition could come before the object it is an intuition of.

Yet at this step the difficulty seems to grow rather than diminish. For the question now reads: *how is it possible to intuit something a priori?* An intuition is a representation of the kind that would depend immediately on the presence of the object. It therefore seems impossible to intuit *originally a priori*, because

1 KANT'S NOTE. See *Critique*, p. 713.

TRANSLATOR'S NOTE. Page 713 of the first (1781) edition of the *Critique of Pure Reason*, in the Doctrine of Method, where Kant explains mathematical construction of concepts.

[282] the intuition would then have to take place without any object, either previously or now present, to which it could refer, and so it could not be intuition. Concepts, it is true, are such that we can very well form some of them *a priori*—namely those that contain only the thought of an object in general—without standing in an immediate relation to the object: for example, the concept of magnitude, of cause, etc. But even these, in order to acquire meaning and sense, require a certain use *in concreto*, i.e., application to some intuition through which an object of them is given to us. But how can *intuition* of an object precede the object itself?

§ 9. INTUITION AS THE FORM OF SENSIBILITY

Intuition can precede objects only if it contains nothing but the form of our sensibility.

If our intuition had to be of such a kind that it represented things *as they are in themselves*, then no intuition *a priori* would take place at all; it would always be empirical. For I can know what is contained in the object in itself only if it is present and given to me. Of course, even then it is incomprehensible how the intuition of a present thing should let me cognize it as it is in itself, since its properties cannot migrate over into my faculty of representation. But even granting that this is possible, such an intuition would still not take place *a priori*, i.e., before the object was represented to me; for without that, no ground could be conceived for the relation of my representation to it—unless it rested on inspiration. There is therefore only one way in which my intuition can precede the actuality of the object and take place as cognition *a priori*: *namely, if it contains nothing but the form of sensibility, which in my subject precedes all actual impressions through which I am affected by objects.* For I can know *a priori* that objects of the senses can be intuited only in accordance with this form of sensibility. From this it follows that propositions concerning merely this form of sensible intuition will be possible and valid for objects of the senses; and likewise, con-

versely, that intuitions possible *a priori* can never concern any things other than objects of our senses.

§ 10. SPACE AND TIME

Space and time are pure intuitions, forms of sensibility, so we cognize objects only as appearances.

283 It is therefore only through the form of sensible intuition that we can intuit things *a priori*; but through it we also cognize objects only as they can *appear* to us (to our senses), not as they may be in themselves. And this presupposition is absolutely necessary if synthetic propositions *a priori* are to be granted as possible—or, if they are actually found, if their possibility is to be understood and determined in advance.

Now space and time are the intuitions that pure mathematics lays at the foundation of all its cognitions and judgments, which come forward as at once apodictic and necessary. For mathematics must first present all its concepts in intuition, and pure mathematics in pure intuition—that is, it must construct them. Without pure intuition it cannot take a single step, since it cannot proceed analytically, by analyzing concepts, but only synthetically—so long, that is, as it lacks pure intuition, in which alone the material for synthetic judgments *a priori* can be given. Geometry takes the pure intuition of space as its basis. Arithmetic produces even its concepts of number by the successive addition of units in time; and pure mechanics above all can produce its concepts of motion only by means of the representation of time. Both representations, however, are mere intuitions. For if from the empirical intuitions of bodies and their alterations (motion) one leaves out everything empirical—namely, what belongs to sensation—space and time still remain. These are therefore pure intuitions that underlie the empirical ones *a priori*, and so can never themselves be left out. But precisely because they are pure intuitions *a priori*, they prove that they are mere forms of our sensibility, which must precede all empirical intuition, i.e., the perception of actual objects, and in

accordance with which objects can be cognized *a priori*—though admittedly only as they appear to us.

§ 11. THE PROBLEM OF PURE MATHEMATICS SOLVED

Mathematics is possible because it concerns only objects of the senses, whose form is space and time.

The problem of the present section is therefore solved. Pure mathematics, as synthetic cognition *a priori*, is possible only because it concerns nothing but mere objects of the senses, whose [284] empirical intuition is grounded in a pure intuition (of space and time), and indeed *a priori*. It can be so grounded because this pure intuition is nothing but the mere form of sensibility, which precedes the actual appearance of objects, since it is what first makes that appearance possible. This capacity to intuit *a priori*, however, does not concern the matter of appearance—that is, what in it is sensation, for that constitutes the empirical element—but only its form, space and time. Should anyone doubt in the least that space and time are determinations not of things in themselves at all, but merely attached to things' relation to sensibility, I would like to know how one can find it possible to know *a priori*—and so before all acquaintance with things, before they are given to us—what their intuition must be like. Yet this is the case here with space and time. It becomes entirely comprehensible, however, as soon as both count as nothing more than formal conditions of our sensibility, and objects count merely as appearances; for then the form of appearance, i.e., the pure intuition, can indeed be represented from ourselves, i.e., *a priori*.

§ 12. EVIDENCE FROM GEOMETRY

Congruence, three dimensions and endless extension all rest on pure intuition, not on concepts.

To add something by way of illustration and confirmation, one need only look at the ordinary and unavoidably necessary procedure of geometers. All proofs of the complete equality of two

given figures (where one can be put in the place of the other in every respect) come down in the end to this: that they coincide with each other. This is obviously nothing other than a synthetic proposition resting on immediate intuition; and this intuition must be given pure and *a priori*, for otherwise that proposition could not count as apodictically certain, but would have only empirical certainty. It would mean only: one always observes it to be so, and it holds only as far as our perception has so far extended. That complete space (which is not itself the boundary of some further space) has three dimensions, and that space in general cannot have more, is built on the proposition that no more than three lines can intersect at right angles in one point. This proposition, however, cannot be demonstrated from concepts at all; it rests immediately on intuition, [285] and indeed on pure intuition *a priori*, because it is apodictically certain. That one can demand that a line be drawn to infinity (*in indefinitum* [indefinitely]), or that a series of alterations (for example, spaces traversed by motion) be continued to infinity, presupposes a representation of space and time that can depend only on intuition—namely, insofar as intuition is in itself bounded by nothing; for this could never be inferred from concepts. Thus pure intuitions *a priori* really do underlie mathematics and make its synthetic and apodictically valid propositions possible. Hence our transcendental deduction of the concepts of space and time at the same time explains the possibility of a pure mathematics. Without such a deduction, and without our assuming that "everything that may be given to our senses (to outer sense in space, to inner sense in time) is intuited by us only as it appears to us, not as it is in itself," this possibility could indeed be granted, but in no way understood.

§ 13. INCONGRUENT COUNTERPARTS

Mirror-image hands and spherical triangles show that space is a form of intuition, not a property of things.

Those who still cannot free themselves from the notion that space and time are actual properties attaching to things in themselves may exercise their acumen on the following paradox. And when they have tried in vain to solve it, they may, freed from prejudice at least for a few moments, suspect that the demotion of space and time to mere forms of our sensible intuition may perhaps have some ground after all.

If two things are completely the same in every respect that can ever be cognized in each taken by itself (in all determinations belonging to magnitude and quality), then surely it must follow that one can be put in the place of the other in all cases and relations, without this exchange causing the slightest recognizable difference. And this is in fact how it is with plane figures in geometry. But various spherical figures, despite that complete inner agreement, nevertheless show such a difference in their outer relation that one cannot possibly be put in the place of the other. For example, two spherical triangles in the two hemispheres, having an arc of the equator as their common base, can be completely equal with respect to both sides and angles, so that nothing is found in either one, [286] when it is described alone and at the same time completely, that does not also lie in the description of the other; and yet one cannot be put in the place of the other (namely, in the opposite hemisphere). Here, then, there is after all an *inner* difference between the two triangles, which no understanding can specify as inner, and which reveals itself only through the outer relation in space. But I will cite more ordinary cases, which can be taken from everyday life.

What can be more similar to my hand or my ear, and more equal in every respect, than its image in a mirror? And yet I cannot put such a hand as is seen in the mirror in the place of its original. For if the original was a right hand, the one in the mir-

ror is a left hand; and the image of the right ear is a left ear, which can never take the place of the former. Now here there are no inner differences that any understanding could even think; and yet the differences are inner, as far as the senses teach us. For the left hand, despite all the equality and similarity between the two, cannot be enclosed within the same boundaries as the right (they cannot be congruent); the glove of one hand cannot be worn on the other. What, then, is the solution? These objects are not representations of things as they are in themselves and as the pure understanding would cognize them; they are sensible intuitions, i.e., appearances, whose possibility rests on the relation of certain things, unknown in themselves, to something else—namely, our sensibility. Now, space is the form of the outer intuition of this sensibility, and the inner determination of any space comes about only through the determination of its outer relation to the whole of space, of which it is a part (its relation to outer sense). That is, the part is possible only through the whole—which is never the case with things in themselves as objects of the mere understanding, but is indeed the case with mere appearances. Hence we cannot make the difference between similar and equal yet incongruent things (for example, snail shells spiraling in opposite directions) intelligible through any single concept, but only through their relation to the right and left hand, which bears immediately on intuition.

REMARK I: GEOMETRY AND THE WORLD OF SENSE

Geometry holds of all objects of the senses because space is the form of all outer appearances.

[287] Pure mathematics, and in particular pure geometry, can have objective reality only on the single condition that it concerns merely objects of the senses. With respect to these, however, the principle stands firm that our sensible representation is by no means a representation of things in themselves, but only of the way they appear to us. From this it follows that the propositions

of geometry are not, say, determinations of a mere creature of our poetic fancy, which therefore could not be referred with reliability to actual objects. Rather, they necessarily hold of space, and therefore also of everything that may be found in space, because space is nothing other than the form of all outer appearances, under which alone objects of the senses can be given to us. Sensibility, whose form geometry takes as its basis, is that on which the possibility of outer appearances rests; these, therefore, can never contain anything other than what geometry prescribes to them. It would be quite different if the senses had to represent objects as they are in themselves. For then it would by no means follow from the representation of space—which the geometer lays down as a basis *a priori*, together with all sorts of properties of space—that all of this, along with what is inferred from it, must behave exactly so in nature. The geometer's space would be taken for a mere fiction and credited with no objective validity, because one cannot see at all why things should necessarily agree with the image that we form of them on our own and in advance. But if this image, or rather this formal intuition, is the essential property of our sensibility, by means of which alone objects are given to us, and if this sensibility represents not things in themselves but only their appearances, then it is quite easy to comprehend, and at the same time irrefutably proven, that all outer objects of our world of sense must necessarily agree with the propositions of geometry with complete exactness. For sensibility, through its form of outer intuition (space), with which the geometer is occupied, is what first makes those objects possible, as mere appearances. It will always remain a remarkable phenomenon in the history of philosophy that there was a time when even mathematicians who were also philosophers began to doubt—not the correctness [288] of their geometrical propositions insofar as these concerned merely space, but the objective validity of this concept itself, and of all its geometrical determinations, and their application to nature. They worried that a line in nature might after all consist of physical points, and hence that true

space in the object might consist of simple parts, although the space the geometer has in mind can by no means consist of such parts. They did not recognize that this space in thought is what makes possible physical space, i.e., the extension of matter itself; that this space is not a property of things in themselves at all, but only a form of our sensible faculty of representation; that all objects in space are mere appearances, i.e., not things in themselves but representations of our sensible intuition. Nor did they recognize that, since space as the geometer thinks it is precisely the form of sensible intuition that we find in ourselves *a priori*, and that contains the ground of the possibility of all outer appearances (as to their form), these appearances must necessarily and with the utmost precision agree with the propositions of the geometer—propositions he draws not from any invented concept, but from the subjective foundation of all outer appearances, namely sensibility itself. In this way and no other can the geometer be secured, against all the chicanery of a shallow metaphysics, in the undoubted objective reality of his propositions, however strange they must seem to such a metaphysics, since it does not go back to the sources of its concepts.

REMARK II: THIS IS NOT IDEALISM

Kant denies that his doctrine is idealism: bodies exist, though we know only their appearances.

Everything that is to be given to us as an object must be given to us in intuition. But all our intuition takes place only by means of the senses; the understanding intuits nothing, but only reflects. Now since, as has just been proven, the senses never, in any single respect, let us cognize things in themselves, but only their appearances, and these are mere representations of sensibility, "then all bodies, together with the space in which they are found, must also be regarded as nothing but mere representations in us, and exist nowhere but merely in our thoughts." Is this not manifest idealism?

Idealism consists in the assertion that there are no beings other than thinking beings, and that the other things we believe we perceive in intuition [289] are only representations in the thinking beings, to which in fact no object existing outside them corresponds. I, on the contrary, say: things are given to us as objects of our senses existing outside us, but of what they may be in themselves we know nothing; we know only their appearances, i.e., the representations they produce in us by affecting our senses. Accordingly, I certainly grant that there are bodies outside us, i.e., things which, though wholly unknown to us as to what they may be in themselves, we know through the representations that their influence on our sensibility provides us, and to which we give the name of a body. This word therefore signifies merely the appearance of that object, which is unknown to us but nonetheless actual. Can this be called idealism? It is precisely the opposite.

That, without detriment to the actual existence of outer things, one can say of a great many of their predicates that they belong not to these things in themselves but only to their appearances, and have no existence of their own outside our representation—this was generally accepted and conceded long before *Locke's* time, and most of all after it. Among these are warmth, color, taste, etc.[2] But that, for important reasons, I also count among mere appearances, beyond these, the remaining qualities of bodies, which are called *primarias* [primary]—extension, place, and in general space with everything that depends on it (impenetrability or materiality, shape, etc.)—against this not the slightest ground of inadmissibility can be adduced. Someone who will not accept colors as properties attaching to the object in itself, but only as modifications attaching to the sense of sight, cannot for that reason be called an idealist. Just as little can my doctrine be called idealistic merely because I find that even more—*indeed, all the properties that make up the*

2 John Locke (1632–1704), English philosopher, who distinguished primary qualities of bodies (extension, shape, solidity) from secondary qualities (color, taste, warmth).

intuition of a body—belong merely to its appearance. For the existence of the thing that appears is not thereby canceled, as in genuine idealism; it is only shown that we cannot cognize it through the senses at all as it is in itself.

I would like to know what my assertions would have to be like in order not to contain idealism. No doubt I would have to say not only that the representation of space is perfectly in keeping with the relation [290] that our sensibility has to objects—for that I have said—but that it is even completely similar to the object. That is an assertion to which I can attach no sense, any more than to the claim that the sensation of red has a similarity to the property of cinnabar that arouses this sensation in me.[3]

REMARK III: APPEARANCE IS NOT ILLUSION

Kant rejects the charge that his doctrine turns the whole world of sense into mere illusion.

From this, an objection that is easy to foresee, but empty, can very easily be dismissed: "namely, that through the ideality of space and time the whole world of sense would be turned into mere illusion." First, all philosophical insight into the nature of sensible cognition had been spoiled by locating sensibility merely in a confused kind of representation, through which we would still cognize things as they are, only without the capacity to bring everything in this representation of ours to clear consciousness;[4] we, on the other hand, have proven that sensibility consists not in this logical difference of clarity or obscurity, but in the genetic difference of the origin of cognition itself. For sensible cognition does not represent things at all as they are, but only the way they affect our senses; so through it mere appearances, not the things themselves, are given to the understanding for reflection. After this necessary correction, an objec-

3 Cinnabar: a bright red mineral (mercury sulfide), long used as the pigment vermilion.

4 "Illusion" renders Kant's *Schein* (mere seeming), which he keeps distinct from *Erscheinung*, "appearance."

tion now stirs, springing from an unpardonable and almost deliberate misinterpretation, as if my doctrine turned all things of the world of sense into mere illusion.

When an appearance is given to us, we are still entirely free as to how we want to judge the matter from it. The appearance rests on the senses, but the judging rests on the understanding, and the only question is whether or not there is truth in the determination of the object. But the difference between truth and dream is not settled by the character of the representations that are referred to objects—for they are the same in both—but by their connection according to the rules that determine the coherence of representations in the concept of an object, and by how far they can or cannot stand together in one experience. And it is not the fault of the appearances at all if our cognition takes illusion for truth, i.e., if intuition, through which an object is given [291] to us, is taken for a concept of the object, or even of its existence, which the understanding alone can think. The senses represent the course of the planets to us now as forward, now as backward, and in this there is neither falsehood nor truth; for as long as one is content to regard this, for the present, as only appearance, one is not yet judging at all about the objective character of their motion.[5] But because a false judgment can easily arise if the understanding does not take good care to prevent this subjective mode of representation from being taken for objective, one says: they seem to go backward. Yet the illusion is chargeable not to the senses but to the understanding, to which alone it belongs to make an objective judgment from the appearance.

In this way, even if we did not reflect at all on the origin of our representations, and simply connected our intuitions of the senses, whatever they may contain, in space and time according to rules of the coherence of all cognition in one experience, deceptive illusion or truth can arise, depending on whether we are careless or cautious. This concerns solely the use of sensible

5 Seen from Earth, planets periodically seem to reverse direction against the stars ("retrograde motion").

representations in the understanding, and not their origin. Likewise, if I take all representations of the senses, together with their form, namely space and time, for nothing but appearances, and take space and time for a mere form of sensibility that is not found at all in objects outside it, and if I use these same representations only in relation to possible experience, then there is not the least temptation to error, nor any illusion, in the fact that I hold them to be mere appearances. For in spite of this they can cohere correctly in experience according to rules of truth. In this way all the propositions of geometry about space hold just as well of all objects of the senses, and hence with respect to all possible experience, whether I regard space as a mere form of sensibility or as something that adheres to the things themselves. Only in the first case, however, can I understand how it is possible to know those propositions *a priori* of all objects of outer intuition. Otherwise, with respect to all merely possible experience, everything remains just as if I had never undertaken this departure from common opinion.

But suppose I venture to go beyond all possible experience with my concepts of space and time—which is unavoidable if I pass them off as properties attaching to things in themselves [292] (for what, then, should stop me from letting them hold of those very same things even if my senses were arranged differently, and whether or not they were suited to those things?). Then a serious error can arise, one that rests on an illusion. For I would be passing off as universally valid what was merely a condition of the intuition of things attaching to my subject—a condition that certainly held for all objects of the senses, and hence for all possible experience—because I referred it to things in themselves and did not restrict it to conditions of experience.

So far, then, is my doctrine of the ideality of space and time from turning the whole sensible world into mere illusion that it is, on the contrary, the only means of securing the application of one of the most important cognitions of all—namely, the one that mathematics sets out *a priori*—to actual objects, and of preventing it from being taken for mere illusion. For without this

observation it would be quite impossible to settle whether the intuitions of space and time, which we borrow from no experience and which nonetheless lie *a priori* in our representation, were not mere self-made figments of the brain to which no object corresponds, at least not adequately—in which case geometry itself would be mere illusion. We, by contrast, have been able to demonstrate its indisputable validity with respect to all objects of the sensible world precisely because these are mere appearances.

Second, so far are these principles of mine—because they make appearances out of the representations of the senses—from turning the truth of experience into mere illusion, that they are, on the contrary, the only means of preventing transcendental illusion. By this illusion metaphysics has always been deceived, and thereby led into the childish endeavor of chasing after soap bubbles, because appearances, which are after all mere representations, were taken for things in themselves. From this have come all those remarkable scenes of the antinomy of reason, which I shall mention further on, and which is removed by that single observation: that appearance, as long as it is used in experience, produces truth, but as soon as it goes beyond the boundary of experience and becomes transcendent, it produces nothing but sheer illusion.

I leave to the things that we represent to ourselves through the senses their actuality, and only restrict our sensible intuition of these things [293] so that in no respect whatever—not even in the pure intuitions of space and time—does it represent anything more than mere appearance of those things, and never their constitution in themselves. This, therefore, is no thoroughgoing illusion that I have ascribed to nature. And my protest against every imputation of idealism is so conclusive and clear that it would even seem superfluous, were there not unqualified judges. Wanting to have an old name ready for every deviation from their perverse though common opinion, and never judging the spirit of philosophical terms but clinging merely to the letter, they stand ready to put their own delusion

in the place of well-defined concepts, and thereby to twist and deform them. For the fact that I myself gave this theory of mine the name of transcendental idealism entitles no one to confuse it with the empirical idealism of Descartes (though with him it was only a problem, whose insolubility, in Descartes's opinion, left everyone free to deny the existence of the corporeal world, since it could never be answered satisfactorily), or with the mystical and visionary idealism of *Berkeley* (against which, and against other similar figments of the brain, our *Critique* rather contains the proper antidote).[6] For what I called idealism did not concern the existence of things (though doubting their existence is what properly constitutes idealism in the accepted sense), since it has never entered my mind to doubt it. It concerned merely the sensible representation of things, to which space and time belong first and foremost. And of these, and hence of all *appearances* in general, I have shown only that they are not things (but mere ways of representing), and also not determinations belonging to things in themselves. The word "transcendental," however—which for me never signifies a relation of our cognition to things, but only to the *faculty of cognition*—was meant to prevent this misinterpretation. But rather than have it occasion that misinterpretation any further, I would sooner withdraw this name and have my idealism called critical. But if it is indeed a reprehensible idealism to turn actual things (not appearances) into mere representations, what name shall we give to the idealism that, conversely, makes mere representations into things? I think it could be called *dreaming* idealism, to distinguish it from the former, which may be called *visionary* idealism. Both were meant to be held off by what I [294] have elsewhere called my transcendental—better, *critical*—idealism.

6 René Descartes (1596–1650), who in the *Meditations* raised doubt about the existence of the external world; George Berkeley (1685–1753), who held that bodies exist only as perceived. "Visionary" renders *schwärmerisch*: given to enthusiasm (*Schwärmerei*), the claim to insight beyond all possible experience.

Part Two: How is pure natural science possible?

The understanding's categories make experience, and the laws of nature, possible.

§ 14. WHAT NATURE IS

Nature is the existence of things under universal laws; as things in themselves it could not be cognized.

Nature is the *existence* of things insofar as it is determined according to universal laws. If nature meant the existence of things *in themselves*, we could never cognize it, either *a priori* or *a posteriori*. Not *a priori*: for how are we to know what belongs to things in themselves? This can never come about through the analysis of our concepts (analytic propositions). For I do not want to know what is contained in my concept of a thing (that belongs to its logical essence), but what is added to this concept in the actuality of the thing, and by what the thing itself is determined in its existence outside my concept. My understanding, and the conditions under which alone it can connect the determinations of things in their existence, prescribe no rule to the things themselves. They do not conform to my understanding; rather, my understanding would have to conform to them. They would therefore have to be given to me beforehand, so that I could take these determinations from them; but then they would not be cognized *a priori*.

Such a cognition of the nature of things in themselves would be impossible *a posteriori* as well. For if experience is to teach me *laws* under which the existence of things stands, then these

laws, insofar as they concern things in themselves, would have to belong to them *necessarily* even outside my experience. Now experience does teach me what exists and how it exists, but never that it must necessarily be so and not otherwise. So it can never teach the nature of things in themselves.

§ 15. THERE IS A PURE NATURAL SCIENCE

Laws such as the permanence of substance and universal causality hold a priori; how is this possible?

Now we are nonetheless actually in possession of a pure natural science, which sets out *a priori*, and with all the necessity required for apodictic [295] propositions, laws under which nature stands. Here I need only call as witness that propaedeutic to the doctrine of nature which, under the title of universal natural science, precedes all physics (physics being founded on empirical principles). In it we find mathematics applied to appearances, and also merely discursive principles (from concepts), which make up the philosophical part of the pure cognition of nature. Yet there is also much in it that is not entirely pure and independent of sources in experience: for instance, the concept of *motion*, of *impenetrability* (on which the empirical concept of matter rests), of *inertia*, and others besides, which prevent it from being called an entirely pure natural science. Moreover, it concerns only the objects of the outer senses, and so gives no example of a universal natural science in the strict sense. For such a science must bring nature in general under universal laws, whether it concerns the object of the outer senses or that of inner sense (the object of physics as well as of psychology). But among the principles of that universal physics there are some that really do have the universality we require, such as the proposition *that substance remains* and persists, that *everything that happens* is always *determined* beforehand *by a cause* according to constant laws, and so on. These are really universal laws of nature, which hold entirely *a priori*. So there is in fact a pure natural science, and the question now is: *how is it possible?*

§ 16. NATURE AS THE SUM TOTAL OF OBJECTS OF EXPERIENCE

Kant confines the inquiry to nature as the sum total of objects of possible experience.

The word *nature* takes on yet another meaning, namely one that determines the *object*, whereas in the meaning above it indicated only the *lawfulness* of the determinations of the existence of things in general. Nature considered *materialiter* [materially, as to its content] is thus the *sum total of all objects of experience*. It is only with this that we are concerned here. For in any case, things that can never become objects of an experience would, if they were to be cognized according to their nature, force us to concepts whose meaning could never be given *in concreto* (in some example of a possible experience). We would thus have to make for ourselves nothing but concepts of their nature, whose reality—that is, whether they actually refer to objects or are mere thought-entities [296] —could never be decided at all. Cognition of what cannot be an object of experience would be hyperphysical, and we are not concerned with anything of that kind here, but with the cognition of nature, whose reality can be confirmed by experience, even though it is possible *a priori* and precedes all experience.

§ 17. THE LAWFULNESS OF EXPERIENCE ITSELF

Kant reframes the question: how can the necessary lawfulness of experience be cognized a priori?

The *formal* aspect of nature in this narrower meaning is therefore the lawfulness of all objects of experience, and, insofar as it is cognized *a priori*, their *necessary* lawfulness. But it has just been shown that the laws of nature can never be cognized *a priori* in objects insofar as these are considered not in relation to possible experience but as things in themselves. Here, however, we are not concerned with things in themselves either (whose properties we leave undecided), but merely with things as

objects of a possible experience; and the sum total of these is properly what we here call nature. And now I ask: when the possibility of an *a priori* cognition of nature is in question, is it better to frame the problem like this—how is it possible to cognize *a priori* the necessary lawfulness *of things* as objects of experience? Or like this—how is it possible to cognize *a priori* the necessary lawfulness *of experience* itself with respect to all its objects in general?

Looked at closely, the solution of the question, whichever way it is put, will come to exactly the same thing with respect to the pure cognition of nature (which is really the point at issue). For the subjective laws under which alone a cognition of things through experience is possible also hold of these things as objects of a possible experience (though not, of course, of them as things in themselves; but such things do not come into consideration here at all). It is entirely the same whether I say: without the law that, when an event is perceived, it is always referred to something preceding it which it follows according to a universal rule, a judgment of perception can never count as experience; or whether I put it this way: everything that experience teaches us happens must have a cause.

[297] It is more fitting, however, to choose the first formula. For we can indeed have, *a priori* and prior to all given objects, a cognition of those conditions under which alone an experience of them is possible, but never of the laws to which they may be subject in themselves, without reference to possible experience. Therefore we shall be able to study the nature of things *a priori* only by investigating the conditions and universal (though subjective) laws under which alone such a cognition is possible as experience (as to its mere form), and by determining accordingly the possibility of things as objects of experience. For if I chose the second way of putting it, and sought the *a priori* conditions under which nature is possible as an *object* of experience, I could easily fall into misunderstanding and imagine that I had to speak of nature as a thing in itself; and then I would be driven

around fruitlessly in endless efforts to find laws for things of which nothing is given to me.

Here, then, we shall be concerned merely with experience and the universal conditions of its possibility that are given *a priori*, and from these we shall determine nature as the whole object of all possible experience. I trust I will be understood: I do not mean here the rules for the *observation* of a nature that is already given, for these already presuppose experience. So I do not mean how we can learn laws from nature (through experience), for these would then not be laws *a priori* and would yield no pure natural science. I mean how the *a priori* conditions of the possibility of experience are at the same time the sources from which all universal laws of nature must be derived.

§ 18. JUDGMENTS OF PERCEPTION AND JUDGMENTS OF EXPERIENCE

Empirical judgments become objectively valid judgments of experience only through pure concepts of the understanding.

We must first note, then, that although all judgments of experience are empirical—that is, have their ground in the immediate perception of the senses—it is not the case, conversely, that all empirical judgments are for that reason judgments of experience. Beyond the empirical, and in general beyond what is given in sensible intuition, special concepts must be added which have their origin wholly *a priori* in the pure understanding. Every perception must first be subsumed under these, and only then, by means of them, can it be transformed into experience.

[298] *Empirical judgments, insofar as they have objective validity*, are *judgments of experience*; those, however, that are *only subjectively valid* I call mere *judgments of perception*. The latter require no pure concept of the understanding, but only the logical connection of perceptions in a thinking subject. The former, however, always require, beyond the representations of sensible intuition, special *concepts originally generated in the understanding*, and it is precisely these that make the judgment of experience *objectively valid*.

All our judgments are at first mere judgments of perception: they hold only for us, that is, for our subject. Only afterward do we give them a new reference, namely to an object, and want the judgment to be valid for us at all times and likewise for everyone. For if a judgment agrees with an object, all judgments about the same object must also agree with one another; and so the objective validity of a judgment of experience signifies nothing other than its necessary universal validity. But conversely, too, if we find cause to regard a judgment as necessarily universally valid (which never rests on the perception, but on the pure concept of the understanding under which the perception is subsumed), then we must also regard it as objective, that is, as expressing not merely a relation of the perception to a subject but a property of the object. For there would be no reason why other people's judgments should necessarily agree with mine, were it not for the unity of the object to which they all refer, with which they agree, and with which, therefore, they must also all agree among themselves.

§ 19. OBJECTIVE VALIDITY IS NECESSARY UNIVERSAL VALIDITY

Objective validity and universal validity are interchangeable; the warm room differs from elastic air.

Objective validity and necessary universal validity (for everyone) are therefore interchangeable concepts. And although we do not know the object in itself, still, when we regard a judgment as universally valid and hence necessary, it is precisely objective validity that is understood by this. Through this judgment we cognize the object (even if what it might be in itself remained otherwise unknown) by means of the universally valid and necessary connection of the given perceptions. And since this is the case with all objects of the senses, judgments of experience will borrow their objective validity not from the immediate cognition [299] of the object (for that is impossible), but merely from the condition of the universal validity of empirical judgments. This condition, as has been said, never rests on

empirical—or indeed on any sensible—conditions, but on a pure concept of the understanding. The object in itself always remains unknown. But when the connection of the representations given to our sensibility by it is determined as universally valid through the concept of the understanding, the object is determined through this relation, and the judgment is objective.

Let us illustrate this. That the room is warm, sugar sweet, wormwood repugnant[1]—these are merely subjectively valid judgments. I do not at all require that I should find it so at all times, or that everyone else should find it just as I do. They express only a relation of two sensations to the same subject, namely myself, and only in my present state of perception, and so they are not supposed to hold of the object either. Judgments of this kind I call judgments of perception. It is quite another matter with the judgment of experience. What experience teaches me under certain circumstances it must teach me at all times, and everyone else too; its validity is not restricted to the subject or to its state at the time. Hence I pronounce all such judgments as objectively valid. For example, when I say that air is elastic, this judgment is at first only a judgment of perception: I merely relate two sensations in my senses to one another. If I want it to be called a judgment of experience, I require that this connection stand under a condition that makes it universally valid. I want, then, that I at all times, and everyone else too, must necessarily combine the same perception under the same circumstances.

1 KANT'S NOTE. I readily admit that these examples do not represent judgments of perception that could ever become judgments of experience, even if a concept of the understanding were added. For they refer merely to feeling, which everyone recognizes as merely subjective and which may therefore never be attributed to the object; so they can never become objective either. For the moment I only wanted to give an example of a judgment that is merely subjectively valid and contains in itself no ground for necessary universal validity, and thereby for a reference to the object. An example of judgments of perception that become judgments of experience through the addition of a concept of the understanding follows in the next note.

§ 20. HOW A JUDGMENT OF EXPERIENCE ARISES

Perceptions become experience only when subsumed under a pure concept of the understanding, such as cause.

300 We shall therefore have to analyze experience in general, to see what is contained in this product of the senses and the understanding, and how the judgment of experience itself is possible. At its basis lies the intuition of which I am conscious, that is, perception (*perceptio*), which belongs merely to the senses. But second, judging also belongs to it (which pertains merely to the understanding). Now this judging can be of two kinds: first, when I merely compare perceptions and connect them in a consciousness of my state; or second, when I connect them in a consciousness in general. The first judgment is merely a judgment of perception and to that extent has only subjective validity; it is merely a connection of perceptions in my state of mind, without reference to the object. Hence it is not enough for experience, as is commonly imagined, to compare perceptions and to connect them in a consciousness by means of judging. No universal validity and necessity of the judgment arises from that, and only on account of these can it be objectively valid and be experience.

Quite another judgment, therefore, must come first, before experience can arise from perception. The given intuition must be subsumed under a concept that determines the form of judging in general with respect to the intuition, connects the empirical consciousness of the intuition in a consciousness in general, and thereby procures universal validity for empirical judgments. Such a concept is a pure *a priori* concept of the understanding, which does nothing but determine for an intuition the general way in which it can serve for judgments. Let such a concept be the concept of cause: it then determines the intuition subsumed under it—for example, that of air—with respect to judging in general: namely, that the concept of air, with respect to its expansion, serves in the relation of ante-

cedent to consequent in a hypothetical judgment. The concept of cause is therefore a pure concept of the understanding, entirely distinct from all possible perception, which serves only to determine the representation contained under it with respect to judging in general, and so to make a universally valid judgment possible.

Now before a judgment of experience can arise from a judgment of perception, it is first required that the perception be subsumed under [301] such a concept of the understanding. For example, air falls under the concept of cause, which determines the judgment about it, with respect to its expansion, as hypothetical.[2] Through this, the expansion is represented not as belonging merely to my perception of the air in my present state, or in several of my states, or in the state of perception of others, but as belonging to it *necessarily*. And the judgment "air is elastic" becomes universally valid, and thereby for the first time a judgment of experience, because certain judgments precede it. These subsume the intuition of air under the concept of cause and effect, and thereby determine the perceptions not merely relative to one another in my subject, but with respect to the form of judging in general (here the hypothetical), and in this way make the empirical judgment universally valid.

If we analyze all our synthetic judgments insofar as they are objectively valid, we find that they never consist of mere intuitions connected in a judgment merely through comparison, as is commonly supposed. Rather, they would be impossible if a pure concept of the understanding had not been added to the concepts abstracted from intuition—a concept under which those concepts are subsumed and only thus connected in an

2 KANT'S NOTE. For an example that is easier to grasp, take the following: when the sun shines on the stone, it becomes warm. This judgment is a mere judgment of perception and contains no necessity, however often I and others may have perceived this; the perceptions are merely usually found combined in this way. But if I say "the sun *warms* the stone," then beyond the perception there is added the concept of the understanding of cause, which *necessarily* connects the concept of heat with the concept of sunshine; and the synthetic judgment becomes necessarily universally valid, consequently objective, and is transformed from a perception into experience.

objectively valid judgment. Even the judgments of pure mathematics, in their simplest axioms, are not exempt from this condition. The principle "a straight line is the shortest between two points" presupposes that the line is subsumed under the concept of magnitude. This concept is certainly no mere intuition; it has its seat solely in the understanding, and serves to determine the intuition (of the line) with respect to the judgments that may be made about it, in regard to their quantity, namely plurality (as [302] *iudicia plurativa* [plurative judgments])[3]. For by such judgments it is understood that a given intuition contains many homogeneous elements.

§ 21. THE TABLES OF JUDGMENTS, CATEGORIES AND PRINCIPLES

Kant sets out the logical table of judgments, which the categories and principles exactly parallel.

In order, then, to set out the possibility of experience insofar as it rests on pure *a priori* concepts of the understanding, we must first present in a complete table what belongs to judging in general and the various moments of the understanding in it. For the pure concepts of the understanding will turn out exactly parallel to these moments. They are nothing more than concepts of intuitions in general insofar as these are determined in themselves for judgments with respect to one or another of these moments—hence necessarily and universally validly. In this way the *a priori* principles of the possibility of all experience, as an objectively valid empirical cognition, will also be determined quite exactly. For they are nothing other than propositions that subsume all perception (in accordance with certain universal

3 KANT'S NOTE. This is what I would prefer to call the judgments that in logic are called *particularia* [particular judgments]. For the latter expression already contains the thought that they are not universal. But if I start from unity (in singular judgments) and proceed from there to totality, I cannot yet mix in any reference to totality: I think only plurality without totality, not the exclusion of totality. This is necessary if the logical moments are to underlie the pure concepts of the understanding; in logical use one may leave things as they were.

conditions of intuition) under those pure concepts of the understanding.

LOGICAL TABLE OF JUDGMENTS

Judgments are classified by quantity, quality, relation and modality.

1. *As to quantity* Universal Particular Singular

2. *As to quality* Affirmative Negative Infinite 3. *As to relation* Categorical Hypothetical Disjunctive

[303] 4. *As to modality* Problematic Assertoric Apodictic

TRANSCENDENTAL TABLE OF THE CONCEPTS OF THE UNDERSTANDING

The twelve categories, arranged under quantity, quality, relation and modality.

1. *Of quantity* Unity (measure) Plurality (magnitude) Totality (the whole) 2. *Of quality* Reality Negation Limitation 3. *Of relation* Substance Cause Community 4. *Of modality* Possibility Existence Necessity

PURE PHYSIOLOGICAL TABLE OF UNIVERSAL PRINCIPLES OF NATURAL SCIENCE

The axioms, anticipations, analogies and postulates that make experience possible.

1. *Axioms* of intuition 2. *Anticipations* of perception 3. *Analogies* of experience 4. *Postulates* of empirical thought in general.

§ 21A. WHAT LIES IN EXPERIENCE

Kant sums up: the question is not how experience arises but what it contains.

[304] To sum up everything so far in a single concept, it is first necessary to remind readers that we are speaking here not of how experience comes about but of what lies in it. The former belongs to empirical psychology, and even there it could never

be properly worked out without the latter, which belongs to the critique of cognition, and in particular of the understanding.

Experience consists of intuitions, which belong to sensibility, and of judgments, which are solely the business of the understanding. But the judgments that the understanding makes solely from sensible intuitions are far from being judgments of experience. For in the one case the judgment would merely connect the perceptions as they are given in sensible intuition; in the latter case, however, the judgments are supposed to say what experience in general contains, and hence not what mere perception—whose validity is merely subjective—contains. The judgment of experience must therefore add something beyond the sensible intuition and its logical connection in a judgment (after the intuition has been made universal through comparison)—something that determines the synthetic judgment as necessary and thereby as universally valid. And this can be nothing other than the concept that represents the intuition as determined in itself with respect to one form of judgment rather than another: that is, a concept of that synthetic unity of intuitions which can be represented only through a given logical function of judgments.

§ 22. THINKING IS JUDGING

To think is to unite representations in one consciousness; pure concepts make this union necessary.

The sum of this is as follows. The business of the senses is to intuit; that of the understanding, to think. But to think is to unite representations in a consciousness. This union arises either merely relative to the subject, and is contingent and subjective, or it takes place without qualification, and is necessary or objective. The union of representations in a consciousness is judgment. Thinking, therefore, is the same as judging, or referring representations to judgments in general. Hence judgments are either merely subjective, when representations are referred to a consciousness in one subject alone and united in it; or they

are objective, when they are united in a consciousness in general, that is, united in it necessarily. [305] The logical moments of all judgments are so many possible ways of uniting representations in a consciousness. But if these same moments serve as concepts, they are concepts of the *necessary* union of representations in a consciousness, and hence principles of objectively valid judgments. This union in a consciousness is either analytic, through identity, or synthetic, through the combination and addition of different representations to one another. Experience consists in the synthetic connection of appearances (perceptions) in a consciousness, insofar as this connection is necessary. Hence pure concepts of the understanding are those under which all perceptions must first be subsumed before they can serve for judgments of experience, in which the synthetic unity of the perceptions is represented as necessary and universally valid.[4]

§ 23. THE PRINCIPLES OF POSSIBLE EXPERIENCE ARE LAWS OF NATURE

The a priori principles of possible experience are universal laws of nature, so pure natural science is possible.

Judgments, insofar as they are regarded merely as the condition of the union of given representations in a consciousness, are

4 KANT'S NOTE. But how does this proposition—that judgments of experience are supposed to contain necessity in the synthesis of perceptions—square with my proposition, insisted on many times above, that experience, as cognition *a posteriori*, can yield only contingent judgments? When I say that experience teaches me something, I always mean only the perception that lies in it—for example, that heat always follows the illumination of the stone by the sun—and to that extent the proposition of experience is always contingent. That this warming follows necessarily from the illumination by the sun is indeed contained in the judgment of experience (by virtue of the concept of cause); but I do not learn this through experience. On the contrary, experience is first generated by this addition of the concept of the understanding (of cause) to the perception. As to how perception comes by this addition, the reader must consult the *Critique*, in the section on the transcendental power of judgment, page 137 and following.

TRANSLATOR'S NOTE. The chapter on the schematism of the pure concepts of the understanding.

rules. These rules, insofar as they represent the union as necessary, are rules *a priori*; and insofar as there are none above them from which they are derived, they are principles. Now with respect to the possibility of all experience, if we consider in it merely the form of thought, there are no conditions of judgments of experience above those that bring appearances, according to the various forms of their intuition, under pure concepts of the understanding [306] which make the empirical judgment objectively valid. These, therefore, are the *a priori* principles of possible experience.

Now the principles of possible experience are at the same time universal laws of nature, which can be cognized *a priori*. And so the problem posed by our present second question—*how is pure natural science possible?*—is solved. For the systematic character required for the form of a science is to be found here in full. Beyond the formal conditions of all judgments in general named above, and hence of all rules in general, which logic offers, no more are possible; and these make up a logical system. The concepts grounded on them, however, which contain the *a priori* conditions for all synthetic and necessary judgments, make up for that very reason a transcendental system. And finally, the principles by means of which all appearances are subsumed under these concepts make up a physiological system, that is, a system of nature, which precedes all empirical cognition of nature, first makes it possible, and can therefore be called the true universal and pure natural science.

§ 24. THE MATHEMATICAL PRINCIPLES

Appearances have magnitude and sensations have degrees, so mathematics applies to nature.

The first[5] of those physiological principles subsumes all appearances, as intuitions in space and time, under the concept of

magnitude, and to that extent it is a principle of the application of mathematics to experience. The second subsumes what is properly empirical—namely sensation, which signifies the real in intuitions—not directly under the concept *of magnitude*, since sensation is not an intuition that *contains* space or time, even though it places the object corresponding to it in both. Yet between reality (the representation of sensation) and zero, that is, the complete emptiness of intuition in time, there is nonetheless a difference that has a magnitude. For between any given degree of light and darkness, between any degree of heat and complete cold, any degree of heaviness and absolute lightness, any degree of the filling of space and [307] completely empty space, ever smaller degrees can always be thought—just as, even between consciousness and complete unconsciousness (psychological obscurity), ever smaller degrees are always to be found. Hence no perception is possible that would prove an absolute absence: for example, no psychological obscurity that could not be regarded as a consciousness merely outweighed by another, stronger one; and so in all cases of sensation. For this reason the understanding can anticipate even sensations, which constitute the proper quality of empirical representations (appearances), by means of the principle that all of them without exception, and hence the real in all appearance, have a degree. This is the second application of mathematics (*mathesis intensorum* [the mathematics of intensive magnitudes]) to natural science.

§ 25. THE DYNAMICAL PRINCIPLES

Substance, cause and community govern the existence of appearances; modality concerns their relation to experience.

With regard to the relation of appearances—and specifically only with a view to their existence—the determination of this relation

5 KANT'S NOTE. These three consecutive sections can hardly be properly understood unless one has at hand what the *Critique* says about the principles. But they may be useful for surveying more easily what is general in those principles and for attending to the main points.

is not mathematical but dynamical. It can never be objectively valid, and hence fit for an experience, unless it stands under *a priori* principles that first make cognition through experience possible with respect to it. Therefore appearances must be subsumed under the concept of substance, which underlies all determination of existence as a concept of the thing itself; or, second, insofar as a succession in time is found among appearances, that is, an event, under the concept of an effect in relation to a cause; or, insofar as simultaneity is to be cognized objectively, that is, through a judgment of experience, under the concept of community (reciprocal action). And so *a priori* principles underlie objectively valid, though empirical, judgments—that is, they underlie the possibility of experience insofar as it is to connect objects in nature with respect to their existence. These principles are the laws of nature proper, which may be called dynamical.

Finally, the cognition of agreement and connection also belongs to judgments of experience—not so much the agreement and connection of appearances with one another in experience, as rather their relation to experience in general. This relation contains either their agreement with the formal conditions that the understanding cognizes, or their coherence with [308] the material of the senses and of perception, or both united in one concept; consequently it contains possibility, actuality, and necessity according to universal laws of nature. This would make up the physiological doctrine of method (the distinction between truth and hypotheses, and the boundaries of the reliability of the latter).

§ 26. HOW THE PRINCIPLES ARE PROVED, AND THEIR LIMITS

The principles hold only of objects of possible experience, never of things in themselves.

The third table, that of the principles, drawn *from the nature of the understanding itself* by the critical method, displays a perfection in itself by which it rises far above every other that has ever

been attempted, or may yet be attempted in future, *from the things themselves* in a dogmatic way, though in vain. For it contains all synthetic *a priori* principles completely, and it has been worked out according to one principle—the faculty of judging in general, which constitutes the essence of experience with respect to the understanding—so that one can be certain there are no more such principles (a satisfaction the dogmatic method can never provide). Yet for all that, this is far from being its greatest merit.

One must attend to the ground of proof that discloses the possibility of this *a priori* cognition and at the same time restricts all such principles to a condition that must never be overlooked, if they are not to be misunderstood and extended in use further than the original sense that the understanding puts into them will allow: namely, that they contain only the conditions of possible experience in general, insofar as it is subject to *a priori* laws. Thus I do not say that things *in themselves* contain a magnitude, their reality a degree, their existence a connection of accidents in a substance, and so on; for no one can prove that, because such a synthetic connection from mere concepts—where all reference to sensible intuition on the one hand, and all connection of it in a possible experience on the other, is lacking—is absolutely impossible. The essential restriction of the concepts in these principles, therefore, is this: that all things stand necessarily *a priori* under the stated conditions only *as objects of experience*.

From this there follows, second, a specifically distinctive way of proving these principles: they are referred not directly to [309] appearances and their relation, but to the possibility of experience, of which appearances make up only the matter, not the form—that is, to objectively and universally valid synthetic propositions, which are precisely what distinguishes judgments of experience from mere judgments of perception. This comes about as follows. Appearances, as mere intuitions *which occupy a part of space and time*, stand under the concept of magnitude, which synthetically unites their manifold *a priori* according to

rules. And insofar as perception contains, besides intuition, also sensation—between which and zero, that is, its complete disappearance, there is always a transition by diminution—the real in appearances must have a degree, insofar, that is, as sensation itself *occupies no part of space or time*[6], though the transition to it from empty time or space is possible only in time. Consequently, although sensation, as the quality of empirical intuition in respect of what specifically distinguishes it from other sensations, can never be cognized *a priori*, it can nevertheless, in a possible experience in general, be distinguished intensively, as a magnitude of perception, from every other sensation of the same kind. It is from this that the application of mathematics to nature, with respect to the sensible intuition through which nature is given to us, is first made possible and determined.

Most of all, however, the reader must pay attention to the way of proving the principles that appear under the name of the analogies of experience. For these do not concern the generation of intuitions, as do the principles of the application of mathematics to natural science in general, but the connection of their existence in an experience. [310] And this connection can be nothing other than the determination of existence in time according to necessary laws, under which alone it is objectively valid, and hence experience. So the proof does not concern the synthetic unity in the connection of *things* in themselves, but of *perceptions*—and of these not with respect to their content, but with respect to the determination of time and the relation of existence in it according to universal laws. These universal laws thus contain

6 KANT'S NOTE. Heat, light, and so on are just as great (in degree) in a small space as in a large one; likewise inner representations—pain, consciousness in general—are not smaller in degree whether they last a short or a long time. Hence the magnitude here is just as great in a point and in an instant as in any space or time, however large. Degrees are thus magnitudes, not in intuition, but as to mere sensation, or also as to the magnitude of the ground of an intuition; and they can be estimated as magnitudes only through the relation of 1 to 0, that is, by the fact that each of them can decrease through infinitely many intermediate degrees until it vanishes, or grow from zero through infinitely many moments of increase to a determinate sensation in a certain time (*quantitas qualitatis est gradus* [the quantity of a quality is its degree]).

the necessity of the determination of existence in time in general (consequently according to an *a priori* rule of the understanding), if the empirical determination in relative time is to be objectively valid, and hence experience. More than this I cannot set out here, in prolegomena. I can only recommend to readers stuck in the long habit of taking experience for a merely empirical assembling of perceptions—and who therefore never consider that it goes much further than these reach, namely that it gives universal validity to empirical judgments and for that requires a pure unity of the understanding which precedes *a priori*—that they pay close attention to this distinction between experience and a mere aggregate of perceptions, and judge the manner of proof from this point of view.

§ 27. REMOVING HUME'S DOUBT

Reason cannot see how causality is possible, yet the concept is not borrowed from experience.

Here, now, is the place to remove Hume's doubt at its root. He rightly asserted that we can in no way see through reason the possibility of causality, that is, of the relation of the existence of one thing to the existence of something else that is necessarily posited by it. I add that we see just as little into the concept of subsistence, that is, into the necessity that the existence of things should have as its basis a subject that cannot itself be a predicate of any other thing—indeed, that we can form no concept of the possibility of such a thing (although we can point to examples of its use in experience). Likewise, I add that this same incomprehensibility also concerns the community of things, since it is impossible to see how, from the state of one thing, a consequence could be drawn about the state of quite other things outside it, and reciprocally; and how substances, each of which has its own separate existence, should depend on one another, and indeed necessarily. Nevertheless, I am far from regarding these concepts [311] as merely borrowed from experience, or the necessity represented in them as fabricated, a mere

illusion that long habit conjures up before us. On the contrary, I have sufficiently shown that they, and the principles drawn from them, stand firm *a priori* before all experience and have their undoubted objective correctness—though, admittedly, only with respect to experience.

§ 28. CATEGORIES AND THE FORMS OF JUDGMENT

We cannot know how things in themselves connect, only how representations are united in judgments.

So although I have not the least concept of such a connection of things in themselves—of how they can exist as substance, or act as cause, or stand in community with others (as parts of a real whole)—and can still less think such properties in appearances as appearances (because those concepts contain nothing that lies in the appearances, but only what the understanding alone must think), we do nonetheless have a concept of this kind of a connection of representations in our understanding, namely in judgments in general. It is this: that in one kind of judgment representations belong together as subject in relation to predicates, in another as ground in relation to consequence, and in a third as parts that together make up a whole possible cognition. Further, we cognize *a priori* that unless we regard the representation of an object as determined with respect to one or another of these moments, we could have no cognition at all that holds of the object. And if we were dealing with the object in itself, not a single mark would be possible by which I could cognize that it is determined with respect to one or another of these moments—that is, that it belongs under the concept of substance, or of cause, or (in relation to other substances) under the concept of community. For I have no concept of the possibility of such a connection of existence. But the question is not how things in themselves, but how the experiential cognition of things, is determined with respect to these moments of judgments in general—that is, how things as objects of experience can and must be subsumed under those concepts of the understanding. And

here it is clear that I have complete insight not only into the possibility but also into the necessity of subsuming all appearances under these concepts, that is, of using them as principles of the possibility of experience.

§ 29. THE CONCEPT OF CAUSE

The sun warming a stone shows how the concept of cause belongs to the form of experience.

312 To make a trial with *Hume*'s problematic concept (his *crux metaphysicorum* [the metaphysicians' torment]), namely the concept of cause: first, the form of a conditional judgment in general—that is, of using one given cognition as ground and the other as consequence—is given to me *a priori* by means of logic. But it is possible that in perception a rule of relation is met with which says that a certain appearance is constantly followed by another (though not the reverse). And this is a case for me to use a hypothetical judgment and to say, for example: if a body is shone on by the sun long enough, it becomes warm. Here, of course, there is not yet any necessity of connection, and hence not yet the concept of cause. But I go on and say: if the above proposition, which is merely a subjective connection of perceptions, is to be a proposition of experience, then it must be regarded as necessary and universally valid. Such a proposition, however, would be: the sun, through its light, is the cause of heat. The empirical rule above is now regarded as a law—and not as holding merely of appearances, but of them for the sake of a possible experience, which requires rules that are valid throughout and therefore necessarily valid. I therefore have full insight into the concept of cause as a concept necessarily belonging to the mere form of experience, and into its possibility as a synthetic unification of perceptions in a consciousness in general. But I have no insight whatever into the possibility of a thing in general as a cause. The reason is that the concept of cause indicates a condition attaching not to things at all, but only to experience: namely, that experience can be an object-

ively valid cognition of appearances and their succession in time only insofar as the preceding appearance can be connected with the succeeding one according to the rule of hypothetical judgments.

§ 30. PURE CONCEPTS HAVE MEANING ONLY IN EXPERIENCE

The categories serve only to spell out appearances; beyond experience they have no meaning.

That is why the pure concepts of the understanding have no meaning whatever if they leave objects of experience behind and are to be referred to things in themselves (*noumena*). They serve, as it were, only to spell out appearances, so that we can read them as experience. The principles that arise from relating these concepts to the world of sense [313] serve our understanding only for use in experience. Beyond that they are arbitrary combinations without objective reality: their possibility cannot be cognized *a priori*, nor can their reference to objects be confirmed, or even made intelligible, by any example—because all examples can be borrowed only from some possible experience, and so the objects of those concepts too can be met with nowhere but in a possible experience.[7]

This complete solution of Hume's problem, though it turns out contrary to its originator's expectation, thus saves for the pure concepts of the understanding their *a priori* origin, and for the universal laws of nature their validity as laws of the understanding. It does so in such a way that it restricts their use to experience alone, because their possibility has its ground solely in the relation of the understanding to experience—not, however, by deriving them from experience, but by deriving experience from them. This completely reversed kind of connection never occurred to *Hume*.

From this flows the following result of all our inquiries so far: "All synthetic principles *a priori* are nothing more than prin-

7 *Noumena* (Greek, "things thought"): objects as they would be for the understanding alone, as opposed to *phaenomena*, "things that appear."

ciples of possible experience," and they can never be referred to things in themselves, but only to appearances as objects of experience. Hence pure mathematics as well as pure natural science can never deal with anything more than mere appearances, and they represent only what either makes experience in general possible, or what, being derived from these principles, must always be capable of being represented in some possible experience.

§ 31. SOMETHING DEFINITE AT LAST

Critique gives metaphysics a fixed rule: our concepts reach no further than experience.

And so at last we have something definite to hold on to in all metaphysical undertakings, which until now have ranged over everything without distinction—boldly enough, but always blindly. It never occurred to dogmatic thinkers that the goal of their efforts should be staked out so close at hand. Not even to those who, defiantly relying on their supposed sound reason, set out after insights with concepts and principles of pure reason that are legitimate and natural, to be sure, but meant only for use in experience—insights for which they knew no definite boundaries, and could know none, [314] because they had never reflected, or had never been able to reflect, on the nature and even the possibility of such a pure understanding.

Many a naturalist of pure reason (by which I mean someone who trusts himself to settle questions of metaphysics without any science) might well claim that what has been set out here with so much apparatus—or, if he prefers, with such long-winded pedantic pomp—he had long ago not merely surmised but actually known and understood, through the prophetic spirit of his sound reason: "namely, that with all our reason we can never get beyond the field of experiences." Yet when his principles of reason are gradually questioned out of him, he must admit that many of them he has not drawn from experience, and that they are therefore independent of it and valid *a priori*. How, then, and

on what grounds, will he keep within limits the dogmatist—and himself—who uses these concepts and principles beyond all possible experience precisely because they are cognized independently of it? And even he, this adept of sound reason, for all his presumed and cheaply acquired wisdom, is not so safe from straying unawares beyond objects of experience into the field of chimeras. Indeed, he is usually entangled in it deeply enough, although by using popular language—passing everything off as mere probability, reasonable conjecture, or analogy—he gives his groundless claims a certain gloss.

§ 32. PHENOMENA AND NOUMENA

Appearances imply things in themselves, which we may think but of which we know nothing determinate.

Besides the beings of sense, or appearances (*phaenomena*), that make up the world of sense, inquirers into pure reason have since the very earliest times of philosophy also thought of special beings of the understanding (*noumena*), which were supposed to make up a world of the understanding. And since they took appearance and illusion to be one and the same (which may well be forgiven in an age not yet cultivated), they granted reality to the beings of the understanding alone.

In fact, if we view the objects of the senses as mere appearances, as is right, we thereby admit at the same time that a thing in itself underlies them—although we are not acquainted with this thing as it is constituted in itself, but only with its appearance, that is, with the [315] way in which our senses are affected by this unknown something. So the understanding, precisely by assuming appearances, also concedes the existence of things in themselves. To that extent we can say that the representation of such beings as underlie appearances—and hence of mere beings of the understanding—is not only permissible but also unavoidable.

Nor does our critical deduction by any means exclude such things (*noumena*). Rather, it restricts the principles of the Aes-

thetic so that they are not to extend to all things—which would turn everything into mere appearance—but are to hold only of objects of a possible experience. Beings of the understanding are therefore admitted by it, but only with the strict enforcement of this rule, which suffers no exception whatever: that we know nothing at all determinate about these pure beings of the understanding, nor can we know anything, because our pure concepts of the understanding, as well as our pure intuitions, apply to nothing but objects of possible experience, and hence to mere beings of sense; and as soon as we depart from these, not the least meaning remains to those concepts.[8]

§ 33. THE TEMPTATION TO A TRANSCENDENT USE

Pure concepts seem to reach things in themselves because they are independent of experience.

There is in fact something treacherous about our pure concepts of the understanding, in that they tempt us to a transcendent use—for that is what I call a use that goes beyond all possible experience. It is not only that our concepts of substance, force, action, reality, and so on, are wholly independent of experience, likewise contain no appearance of the senses at all, and so in fact seem to apply to things in themselves (*noumena*). What strengthens this supposition still further is that they contain within themselves a necessity of determination that experience never matches. The concept of cause contains a rule according to which one state follows from another necessarily. But experience can show us only that one state of things often—or, at most, commonly—follows another, and so it can provide neither strict universality nor necessity, and so on.

Hence concepts of the understanding seem to have far more meaning and content than could be exhausted by their merely empirical use. And so the understanding, without noticing, builds onto the house of experience 316 a much more spacious

8 The Transcendental Aesthetic, the part of the *Critique* dealing with sensibility and its forms, space and time.

annex, which it fills with nothing but beings of thought—without ever noticing that with its otherwise correct concepts it has climbed beyond the boundaries of their use.

§ 34. WHY PURE CONCEPTS NEED INTUITION

Pure concepts have meaning only through sensible intuition; an intelligible world is only a problem.

Two important, indeed quite indispensable, though extremely dry investigations were therefore necessary; they were carried out in the *Critique*, pp. 137 ff. and 235 ff. The first of these showed that the senses do not supply the pure concepts of the understanding *in concreto* [in concrete form], but only the schema for their use, and that the object corresponding to this schema is met with only in experience (as the product of the understanding from materials of sensibility). In the second investigation (*Critique*, p.[9] 235) it is shown that, despite the independence of our pure concepts and principles of the understanding from experience, and even despite their apparently greater scope of use, nothing at all can be thought through them outside the field of experience. For they can do nothing but determine the logical form of judgment with respect to given intuitions; but since beyond the field of sensibility there is no intuition whatever, those pure concepts lack all meaning, because they cannot be exhibited *in concreto* by any means. Consequently all such *noumena*, together with their sum total, an intelligible[10] world, are nothing but representations of a problem whose object is quite possible

9 The chapters on the schematism and on the distinction between phenomena and noumena.

10 KANT'S NOTE. Not (as people commonly put it) an *intellectual* world. For it is *cognitions* through the understanding that are *intellectual*, and cognitions of that kind apply to our world of sense as well. *Objects*, however, are called *intelligible* insofar as they can be represented *merely through the understanding* and none of our sensible intuitions can apply to them. But since some possible intuition must correspond to every object, we would have to think of an understanding that intuited things immediately. Of such an understanding, however, we have not the least concept, and so we have none of the *beings of the understanding* to which it is supposed to apply either.

in itself, but whose solution is wholly impossible given the nature of our understanding. For our understanding is not a faculty of intuition, but merely of the connection of given intuitions in an experience. And so [317] experience must contain all the objects for our concepts, while outside it all concepts will be without meaning, since no intuition can be placed under them.

§ 35. THE UNDERSTANDING MUST THINK, NOT RAVE

The imagination may be forgiven its flights, but the understanding may not indulge in enthusiasm.

The imagination may perhaps be forgiven if it sometimes indulges in visionary fanaticism, that is, does not keep cautiously within the limits of experience; for at least it is enlivened and strengthened by such free flight, and it will always be easier to moderate its boldness than to revive its languor. But that the understanding, which is supposed to *think*, should instead *indulge in visionary fanaticism*—that can never be forgiven it. For on it alone rests all our help in setting boundaries, where necessary, to the fanaticism of the imagination.[11]

Yet the understanding begins this quite innocently and modestly. First it clarifies the elementary cognitions that reside in it prior to all experience, but that must nevertheless always have their application in experience. Gradually it drops these limits—and what indeed should stop it, since the understanding has taken its principles entirely freely from itself? And now it proceeds first to newly invented forces in nature, and soon afterward to beings outside nature—in a word, to a world for whose construction we can never run short of building material, because fertile invention supplies it in abundance, and experience, while it never confirms it, also never refutes it. This is also why young thinkers love metaphysics in the true dogmatic manner so much, and often sacrifice to it their time and their otherwise useful talent.

But it is of no help at all to try to moderate those fruitless attempts of pure reason by all sorts of reminders about how hard it is to solve such deeply hidden questions, by complaints about the limits of our reason, and by reducing assertions to mere conjectures. For unless their *impossibility* has been clearly demonstrated, and unless reason's *self-cognition* becomes a true science, in which the field of its correct use is distinguished—with geometrical certainty, so to speak—from that of its empty and fruitless use, those vain efforts will never be wholly put a stop to.

§ 36. HOW IS NATURE ITSELF POSSIBLE?

Nature is possible through our sensibility and understanding; the understanding prescribes its laws to nature.

[318] This question, which is the highest point that transcendental philosophy can ever touch, and to which it must also be brought as its boundary and completion, actually contains two questions.

First: how is nature in the *material* sense—namely, as regards intuition, as the sum total of appearances—how are space, time, and what fills them both, the object of sensation, possible at all? The answer is: by means of the constitution of our sensibility, according to which it is affected, in the way peculiar to it, by objects that are in themselves unknown to it and wholly distinct from those appearances. This answer has been given in the book itself in the Transcendental Aesthetic, and here in the *Prolegomena* by the solution of the first main question.

Second: how is nature possible in the formal sense, as the sum total of the rules under which all appearances must stand if they are to be thought as connected in one experience? The answer cannot turn out otherwise than this: it is possible only by means of the constitution of our understanding, according to which all those representations of sensibility are necessarily referred to one consciousness. Through this, first of all, our own peculiar

11 *Schwärmerei* is also often translated "enthusiasm".

way of thinking—namely, through rules—becomes possible, and by means of these rules, experience, which is to be wholly distinguished from insight into objects in themselves. This answer has been given in the book itself in the Transcendental Logic, and here in the *Prolegomena* in the course of solving the second main question.

But how this peculiar property of our sensibility itself is possible, or that of our understanding and of the necessary apperception underlying it and all thinking, cannot be further solved or answered, because we always need them again for any answering and for any thinking of objects.[12]

There are many laws of nature that we can know only by means of experience. But the lawfulness in the connection of appearances, that is, nature in general, we cannot come to know through any experience, [319] because experience itself requires such laws, which underlie its possibility *a priori*.

The possibility of experience in general is thus at the same time the universal law of nature, and the principles of the former are themselves the laws of the latter. For we are acquainted with nature only as the sum total of appearances, that is, of representations in us. So we can take the law of their connection from nowhere but the principles of their connection in us—that is, from the conditions of the necessary unification in one consciousness that constitutes the possibility of experience.

Even the main proposition worked out through this whole section—that universal laws of nature can be cognized *a priori*—already leads of itself to the proposition that the highest legislation of nature must lie in ourselves, that is, in our understanding. We must not seek the universal laws of nature from nature by means of experience; conversely, we must seek nature, as regards its universal lawfulness, solely in the conditions of the possibility of experience that lie in our sensibility and understanding. For how else would it be possible to know these laws *a priori*, since they are not rules of analytic cognition, but genuine

12 Apperception: Kant's term for self-consciousness, the unity of the "I think" to which all representations must be related.

synthetic extensions of it? Such an agreement—indeed a necessary one—between the principles of possible experience and the laws of the possibility of nature can come about for only two reasons: either these laws are borrowed from nature by means of experience, or, conversely, nature is derived from the laws of the possibility of experience in general and is completely identical with the mere universal lawfulness of the latter. The first contradicts itself, for the universal laws of nature can and must be cognized *a priori* (that is, independently of all experience) and laid at the foundation of all empirical use of the understanding. So only the second remains.[13]

320 But we must distinguish empirical laws of nature, which always presuppose particular perceptions, from the pure or universal laws of nature, which, without being based on particular perceptions, contain merely the conditions of their necessary unification in one experience. With regard to the latter, nature and *possible* experience are entirely one and the same. And since in possible experience lawfulness rests on the necessary connection of appearances in one experience (without which we could cognize no object of the world of sense at all), and hence on the original laws of the understanding, it sounds strange at first, but is nonetheless certain, when I say with regard to the latter: *the understanding does not draw its laws* (*a priori*) *from nature, but prescribes them to nature*.

13 KANT'S NOTE. *Crusius* alone knew of a middle way: namely, that a spirit who can neither err nor deceive originally implanted these laws of nature in us. But since deceptive principles are often mixed in as well—of which this man's own system gives not a few examples—the use of such a principle looks very dubious, given the lack of sure criteria for distinguishing the genuine origin from the spurious one. For one can never know for certain what the spirit of truth or the father of lies may have instilled in us.

TRANSLATOR'S NOTE. Christian August Crusius (1715–1775), German philosopher and theologian and a leading critic of Wolff. The "father of lies" is the devil (John 8:44).

§ 37. LAWS THAT THE UNDERSTANDING PUTS INTO NATURE

Kant introduces an example to show that necessary laws of nature come from the understanding.

Let us illustrate this seemingly daring proposition by an example, which is meant to show that laws we discover in objects of sensible intuition, especially when they have been cognized as necessary, are already taken by us ourselves to be laws that the understanding has put there—even though they are otherwise similar in every respect to the laws of nature that we ascribe to experience.

§ 38. THE CIRCLE AND THE LAW OF ATTRACTION

Laws of the circle and the inverse-square law stem from how the understanding determines space.

If we consider the properties of the circle, by which this figure at once unites so many arbitrary determinations of space within it in a universal rule, we cannot help attributing a nature to this geometrical thing. Thus two lines that intersect each other and at the same time the circle, however randomly they may be drawn, always divide each other so regularly that the rectangle formed from the segments of one line is equal to that of the other. Now I ask: "Does this law lie in the circle, or does it lie in the understanding?" That is,[14] does this figure contain the ground of this law within itself, independently of the understanding? Or does the understanding—having itself constructed the figure according to its concepts (namely, the equality of the radii)—at the same time put into it the law of chords that cut one another in geometric proportion? If we follow the proofs 321 of this law, we soon become aware that it can be derived solely from the condition that the understanding laid at the basis of its construction of this figure, namely the equality of the radii. Now if we extend this concept, to pursue still further the unity of the

14 The intersecting-chords theorem (Euclid, *Elements* III.35).

manifold properties of geometrical figures under common laws, and consider the circle as a conic section, which therefore stands under the very same basic conditions of construction as other conic sections, we find that all chords that intersect within the latter—the ellipse, the parabola, and the hyperbola—always do so in such a way that the rectangles formed from their parts are not indeed equal, but always stand in the same ratios to one another. If we go still further from there, namely to the basic doctrines of physical astronomy, we find a physical law of reciprocal attraction extending over the whole of material nature. Its rule is that attraction decreases inversely with the square of the distance from each attracting point, just as the spherical surfaces over which this force spreads increase. This law seems to lie necessarily in the nature of things themselves, and so it is usually presented as cognizable *a priori*. Simple as the sources of this law are—for they rest merely on the relation of spherical surfaces of different radii—its consequence is so excellent with regard to the variety and regularity of its agreement that not only do all possible orbits of the heavenly bodies follow in conic sections, but such a relation of these orbits to one another also results that no law of attraction other than that of the inverse square of the distances can be conceived as suitable for a world system.

Here, then, is nature resting on laws that the understanding cognizes *a priori*, and chiefly from universal principles of the determination of space. Now I ask: do these laws of nature lie in space, and does the understanding learn them merely by trying to explore the rich meaning that lies in space? Or do they lie in the understanding and in the way it determines space according to the conditions of synthetic unity toward which all its concepts converge? Space is something so uniform, and so indeterminate with regard to all particular properties, that one will certainly not look for a treasure of laws of nature in it. By contrast, what determines space into the shape of a circle, or the figures of the cone and the sphere, is the understanding, insofar as it [322] contains the ground of the unity of their construction. The

mere universal form of intuition called space is therefore indeed the substratum of all intuitions determinable to particular objects, and in it, of course, lies the condition of their possibility and variety. But the unity of the objects is determined solely by the understanding, and according to conditions that lie in its own nature. And so the understanding is the origin of the universal order of nature: it comprehends all appearances under its own laws, and thereby first brings about experience (as regards its form) *a priori*, by virtue of which everything that is to be cognized only through experience is necessarily subject to its laws. For we are not dealing with the nature of *things in themselves*, which is independent of the conditions of both our sensibility and our understanding, but with nature as an object of possible experience. And here the understanding, in making experience possible, at the same time brings it about that the world of sense is either no object of experience at all or else a nature.

§ 39. APPENDIX TO PURE NATURAL SCIENCE: ON THE SYSTEM OF THE CATEGORIES

Kant contrasts his principled table of categories with Aristotle's unprincipled list.

Nothing can be more welcome to a philosopher than being able to derive from one principle *a priori* the manifold of concepts or principles that had previously presented themselves to him piecemeal, through the use he had made of them *in concreto*, and so to unite everything in one cognition. Before, he only believed that what remained to him after a certain abstraction, and seemed, by comparison with one another, to make up a particular kind of cognitions, had been completely collected; but it was only an *aggregate*. Now he knows that just so many, no more and no fewer, can make up this kind of cognition, and he has seen the necessity of his division—which is a comprehending—and only now does he have a *system*.

To search out from common cognition the concepts that are based on no particular experience at all and yet occur in all cognition from experience, of which they make up, as it were, the

mere [323] form of connection, required no greater reflection or insight than to search out from a language the rules of the actual use of words in general, and so to gather elements for a grammar (in fact the two inquiries are very closely related). Yet one would not be able to give a reason why each language has just this formal constitution and no other, still less why just so many such formal determinations of it in general, no more and no fewer, can be found.

Aristotle had gathered together ten such pure elementary concepts under the name of categories.[15] To these, which were also called predicaments, he later found himself obliged to add five post-predicaments,[16] some of which, however, already lie in the former (such as *prius* [prior], *simul* [simultaneous], *motus* [motion]). But this rhapsody could count, and deserve approval, more as a hint for future inquirers than as an idea carried out methodically; and so, as philosophy became more enlightened, it was rejected as wholly useless.[17]

In an investigation of the pure elements of human cognition (those containing nothing empirical), I succeeded, only after long reflection, in reliably distinguishing and separating the pure elementary concepts of sensibility (space and time) from those of the understanding. This excluded the 7th, 8th, and 9th categories from that list. The rest could be of no use to me, because there was no principle according to which the understanding could be fully surveyed, and all its functions, from which its pure concepts arise, determined exhaustively and with precision.

But to discover such a principle, I looked around for an act of the understanding that contains all the others and is differentiated only by various modifications or moments in bringing the

15 KANT'S NOTE. 1. *Substantia* [substance]. 2. *Qualitas* [quality]. 3. *Quantitas* [quantity]. 4. *Relatio* [relation]. 5. *Actio* [action]. 6. *Passio* [being acted upon]. 7. *Quando* [when]. 8. *Ubi* [where]. 9. *Situs* [position]. 10. *Habitus* [having].

16 KANT'S NOTE. *Oppositum* [opposition], *Prius* [priority], *Simul* [simultaneity], *Motus* [motion], *Habere* [having].

17 Aristotle (384–322 BC), Greek philosopher. The ten categories are set out in his *Categories*; the "post-predicaments" are treated in its closing chapters.

manifold of representation under the unity of thinking in general. And I found that this act of the understanding consists in judging. Here the work of the logicians already lay before me, finished though not yet wholly free of defects, and it enabled me to present a complete table of pure functions of the understanding, which were, however, undetermined [324] with regard to any object. Finally I related these functions of judging to objects in general—or rather to the condition for determining judgments as objectively valid—and there arose pure concepts of the understanding, about which I could be in no doubt that just these, and just so many of them, no more and no fewer, can make up our entire cognition of things from the mere understanding. I called them, as was fitting, by their old name, *categories*. In doing so I reserved the right to add in full, under the name of *predicables*, all the concepts to be derived from them—whether by connecting them with one another, or with the pure form of appearance (space and time), or with its matter insofar as it is not yet empirically determined (the object of sensation in general)—as soon as a system of transcendental philosophy should be brought about, on behalf of which I was at present concerned only with the critique of reason itself.

What is essential in this system of categories, however—what distinguishes it from that old rhapsody, which proceeded without any principle, and why it alone deserves to be counted as part of philosophy—is this: that by means of it the true meaning of the pure concepts of the understanding and the condition of their use could be precisely determined. For it turned out that in themselves they are nothing but logical functions, and that as such they do not make up the least concept of an object in itself, but need sensible intuition to underlie them. They then serve only to determine empirical judgments—which are otherwise undetermined and indifferent with regard to all the functions of judging—with regard to those functions, thereby securing universal validity for them, and by means of this making *judgments of experience* possible at all.

Neither their first originator nor anyone after him ever thought of such an insight into the nature of the categories, one that at the same time restricted them to merely empirical use. But without this insight (which depends quite precisely on their derivation, or deduction) they are wholly useless, a miserable register of names without explanation or rule for their use. Had anything like this ever occurred to the ancients, then without doubt the whole study of the cognition of pure reason—which under the name of metaphysics has spoiled so many good minds over many centuries—would have come down to us in a quite different form, and would have enlightened the human understanding, [325] instead of, as has actually happened, exhausting it in gloomy and futile brooding and making it unfit for true science.

This system of categories now makes all treatment of every object of pure reason itself systematic in turn. It provides an undoubted guide, or guiding thread, showing how, and through which points of inquiry, every metaphysical consideration must be conducted if it is to be complete; for it exhausts all the moments of the understanding under which every other concept must be brought. The table of principles arose in the same way, and one can be certain of its completeness only through the system of categories. And even in the division of the concepts that are supposed to go beyond the physiological use of the understanding (*Critique*, p. 344, and likewise p.[18] 415), it is always the same guiding thread. Because it must always be led through the same fixed points, determined *a priori* in the human understanding, it always forms a closed circle, which leaves no doubt that the object of a pure concept of the understanding or of reason, insofar as it is to be considered philosophically and according to principles *a priori*, can be completely cognized in this way. I have even been unable to refrain from making use of this guidance with regard to one of the most abstract ontological divisions, namely the manifold distinction of *the concepts of*

18 "Physiological" here means concerning nature (Greek *physis*), not the body.

something and nothing, and from producing accordingly a regular and necessary table (*Critique*, p. 292).[19]

326 This same system shows its use—which cannot be praised enough—as every true system founded on a universal principle does, also in this: it expels all foreign concepts that might otherwise creep in among those pure concepts of the understanding, and assigns each cognition its place. The concepts that I had likewise brought into a table, following the guiding thread of the categories, under the name of *concepts of reflection*, mingle in ontology among the pure concepts of the understanding without leave or rightful claim. Yet the latter are concepts of connection, and thereby of the object itself, whereas the former are concepts merely of the comparison of concepts already given, and hence have an entirely different nature and use. By my lawful division (*Critique*, p. 260) they are separated out of this mixture. But the use of that separate table of categories strikes the eye far more clearly still when, as will be done right now, we separate from those concepts of the understanding the table of transcendental concepts of reason, which are of an entirely different nature and origin (and so must also have a different form). This separation,

19 KANT'S NOTE. All sorts of nice observations can be made about a table of categories once it is set out, such as: (1) that the third category arises from the first and second combined into one concept; (2) that in the categories of quantity and quality there is merely a progression from unity to totality, or from something to nothing (for this purpose the categories of quality must stand thus: reality, limitation, complete negation), without *correlata* [correlates] or *opposita* [opposites], whereas those of relation and modality carry the latter with them; (3) that just as in *logic* categorical judgments underlie all others, so the category of substance underlies all concepts of actual things; (4) that just as modality in a judgment is not a particular predicate, so the modal concepts add no determination to things; and so on. All such considerations have their great use. If, moreover, one enumerates all the *predicables*, which can be drawn fairly completely from any good ontology (for example Baumgarten's), and arranges them by classes under the categories—taking care to add as complete an analysis of all these concepts as possible—then a merely analytic part of metaphysics will arise. It would contain no synthetic proposition at all and could precede the second (synthetic) part; and through its determinacy and completeness it would have not only usefulness but also, by virtue of its systematic character, a certain beauty besides.

TRANSLATOR'S NOTE. Alexander Gottlieb Baumgarten (1714–1762), whose *Metaphysica* Kant used as his lecture textbook.

necessary as it is, has never been made in any system of metaphysics. There, therefore, those ideas of reason run together indiscriminately with concepts of the understanding, as if they belonged to one family like siblings—a confusion that, lacking a distinct system of categories, could never have been avoided either.

Part Three: How is metaphysics in general possible?

Reason's ideas of soul, world and God, and the illusions they produce.

§ 40. WHY METAPHYSICS NEEDS A DEDUCTION

Unlike mathematics and natural science, metaphysics needs a deduction for its own sake, since its ideas exceed experience.

[327] Pure mathematics and pure natural science would not have needed, *for the sake of their own security* and certainty, any such deduction as we have so far carried out for both. For the former rests on its own self-evidence; the latter, although sprung from pure sources of the understanding, nevertheless rests on experience and its thoroughgoing confirmation. It cannot wholly reject or do without the testimony of experience, because for all its certainty it can still never, as philosophy, equal mathematics. Both sciences therefore needed this investigation not for themselves but for another science, namely metaphysics.

Besides concepts of nature, which always find their application in experience, metaphysics is also concerned with pure concepts of reason, which are never given in any experience that is even possible. It is therefore concerned with concepts whose objective reality (that they are not mere chimeras), and with assertions whose truth or falsity, cannot be confirmed or exposed by any experience. And this part of metaphysics is, moreover, precisely the one that constitutes its essential end, to which everything else is only a means. So this science needs such a deduction *for its own sake*. The third question now before

us therefore concerns, as it were, the core and the distinctive feature of metaphysics: namely, reason's occupation merely with itself, and the acquaintance with objects that supposedly arises directly from its brooding over its own concepts, without its needing the mediation of experience for this, or being able to reach it through experience at all.[1] Without solving this question reason never satisfies itself. The use in experience to which reason restricts the pure understanding [328] does not fulfill reason's own entire vocation. Every single experience is only a part of the whole sphere of its domain; but the *absolute whole of all possible experience* is not itself an experience, and yet it is a necessary problem for reason. Merely to represent it, reason needs concepts quite different from those pure concepts of the understanding, whose use is only *immanent*, that is, applies to experience so far as it can be given. Concepts of reason, by contrast, apply to completeness, that is, to the collective unity of the whole of possible experience, and thereby go beyond every given experience and become *transcendent*.

So just as the understanding needed the categories for experience, reason contains within itself the ground of ideas—by which I mean necessary concepts whose object nonetheless *cannot* be given in any experience. The latter lie in the nature of reason just as much as the former lie in the nature of the understanding. And if the ideas carry with them an illusion that can easily lead us astray, this illusion is unavoidable, although it can very well be prevented "from seducing us."

Since all illusion consists in taking the subjective ground of a judgment to be objective, a self-cognition of pure reason in its transcendent (extravagant) use will be the only safeguard against the aberrations into which reason falls when it misinterprets its vocation and refers transcendently to the object in itself

1 KANT'S NOTE. If one can say that a science is *actual*, at least in the idea of all human beings, as soon as it is settled that the problems leading to it are put before everyone by the nature of human reason, and that many attempts at it, though faulty, are therefore always unavoidable, then one will also have to say: metaphysics is subjectively (and indeed necessarily) actual. And so we rightly ask how it is (objectively) possible.

what concerns only its own subject and the guidance of that subject in all immanent use.

§ 41. IDEAS DISTINGUISHED FROM CATEGORIES

Separating ideas of reason from concepts of the understanding is essential to any metaphysics.

The distinction of *ideas*, that is, of pure concepts of reason, from the categories, or pure concepts of the understanding, as cognitions of an entirely different kind, origin, and use, is so important a piece of laying the foundation of a science that is to contain the system of all these cognitions *a priori* that without such a separation [329] metaphysics is absolutely impossible—or at best a disorderly, bungling attempt to cobble together a house of cards without knowing the materials one is working with or their suitability for this or that purpose. Even if the *Critique of Pure Reason* had accomplished nothing but this alone—to set this distinction before our eyes for the first time—it would thereby already have contributed more to clarifying our concept and to guiding inquiry in the field of metaphysics than all the fruitless efforts ever undertaken to satisfy the transcendent problems of pure reason. Those efforts were made without anyone ever imagining that one was in a field quite different from that of the understanding, and so concepts of the understanding and concepts of reason were named in one breath, as if they were of the same kind.

§ 42. REASON MUST EXAMINE ITSELF

Errors of transcendent cognition can be exposed only by an investigation of reason itself.

All pure cognitions of the understanding have this about them: their concepts can be given in experience and their principles confirmed by experience. The transcendent cognitions of reason, by contrast, can neither be given in experience as far as their *ideas* are concerned, nor can their *propositions* ever be confirmed or refuted by experience. Hence any error that may

creep in here can be uncovered by nothing but pure reason itself. That, however, is very difficult, because this very reason, by means of its ideas, naturally becomes dialectical; and this unavoidable illusion can be kept within limits not by any objective and dogmatic investigations of things, but only by a subjective investigation of reason itself as a source of ideas.

§ 43. THE ORIGIN OF THE IDEAS

The ideas arise from the three forms of syllogism: psychological, cosmological and theological.

It has always been my chief aim in the *Critique* to see how I could not only carefully distinguish the kinds of cognition, but also derive all the concepts belonging to each of them from their common source. In this way, knowing where they come from, I could not only determine their use with certainty, but would also have the never-suspected yet invaluable advantage of cognizing *a priori*, and hence according to principles, the completeness of the enumeration, classification, and specification of concepts. Without this, everything [330] in metaphysics is sheer rhapsody, where one never knows whether what one possesses is enough, or whether, and where, something may still be missing. Of course, one can have this advantage only in pure philosophy; but in pure philosophy it also constitutes the very essence.

Since I had found the origin of the categories in the four logical functions of all judgments of the understanding, it was entirely natural to look for the origin of the ideas in the three functions of syllogisms. For once such pure concepts of reason (transcendental ideas) are given, they could hardly be found anywhere other than in that same act of reason—unless one wants to regard them as innate. Insofar as this act concerns merely form, it constitutes the logical element in syllogisms; but insofar as it represents the judgments of the understanding as

determined *a priori* with respect to one form or another, it constitutes transcendental concepts of pure reason.[2]

The formal difference among syllogisms makes it necessary to divide them into categorical, hypothetical and disjunctive. The concepts of reason based on this division therefore contain, first, the idea of the complete subject (the substantial); second, the idea of the complete series of conditions; third, the determination of all concepts in the idea of a complete sum total of the possible.[3] The first idea was psychological, the second cosmological, the third theological. And since all three give rise to a dialectic, though each in its own way, the division of the whole dialectic of pure reason into the paralogism, the antinomy and finally the ideal of pure reason was based on this. Through this derivation one is made completely certain that all the claims of pure reason are presented here in full, and that not a single one can be missing, because the faculty of reason itself, from which they all take their origin, is thereby measured out in its entirety.

§ 44. WHAT THE IDEAS ARE FOR

The ideas are useless for explaining nature, yet reason demands the completeness they represent.

331 In this consideration in general it is also noteworthy that the ideas of reason are not, like the categories, of any use to us in employing the understanding with respect to experience. With respect to that employment they are entirely dispensable;

2 "Syllogism" renders *Vernunftschluss*, literally an "inference of reason"; its three forms (categorical, hypothetical, disjunctive) are the basis of Kant's derivation of the ideas.

3 KANT'S NOTE. In a disjunctive judgment we regard *all possibility* as divided with respect to a certain concept. The ontological principle of the thoroughgoing determination of a thing in general (of all possible pairs of opposed predicates, one belongs to each thing), which is at the same time the principle of all disjunctive judgments, takes as its basis the sum total of all possibility, in which the possibility of every thing in general is regarded as determinable. This serves as a small elucidation of the proposition above: that the act of reason in disjunctive syllogisms is the same in form as the act by which it brings about the idea of a sum total of all reality—an idea that contains within itself the positive element of all mutually opposed predicates.

indeed, they are even contrary and obstructive to the maxims of the rational cognition of nature. Yet they are nonetheless necessary for another purpose, still to be determined. Whether the soul is a simple substance or not can be a matter of complete indifference to us in explaining its appearances. For we cannot make the concept of a simple being sensible through any possible experience, and hence cannot make it intelligible *in concreto*. So with respect to all hoped-for insight into the cause of appearances it is completely empty, and it cannot serve as a principle for explaining what inner or outer experience provides. Just as little can the cosmological ideas of the beginning of the world or of the world's eternity (*a parte ante*) be of use to us in explaining any event in the world itself.[4] Finally, by a correct maxim of natural philosophy, we must refrain from every explanation of the arrangement of nature that is drawn from the will of a supreme being, because this is no longer natural philosophy but a confession that we have come to the end of it. These ideas therefore have a quite different determination of their use from that of the categories, through which, together with the principles built on them, experience itself first became possible. And yet our laborious analytic of the understanding would also be entirely superfluous if our aim were directed at nothing but mere cognition of nature as it can be given in experience. For reason does its work quite safely and well in mathematics as well as in natural science, even without all this subtle deduction. So our critique of the understanding joins with the ideas of pure reason for a purpose that is set beyond the empirical use of the understanding—although we said above that a use of the understanding in that direction is entirely impossible and without object or meaning. There must nevertheless be agreement between what belongs to the nature of reason and what belongs to the nature of the understanding: the former must contribute to the perfection of the latter and cannot possibly throw it into confusion.

The solution to this question is as follows. In its ideas, pure reason does not aim at particular objects lying beyond the field of [332] experience; it demands only completeness of the understanding's use in the connected whole of experience. But this completeness can only be a completeness of principles, not of intuitions and objects. Nevertheless, in order to represent that completeness determinately, reason thinks of it as the cognition of an object whose cognition is completely determined with respect to those rules. This object, however, is only an idea, serving to bring the understanding's cognition as close as possible to the completeness that the idea signifies.

§ 45. PRELIMINARY REMARK ON THE DIALECTIC OF PURE REASON

Reason's demand for completeness lures the understanding into a transcendent use of its concepts.

We showed above, in §§ 33 and 34, that the purity of the categories—their freedom from any admixture of sensible determinations—can mislead reason into extending their use entirely beyond all experience, to things in themselves. Yet since the categories find no intuition that could provide them with meaning and sense *in concreto*, they can indeed, as merely logical functions, represent a thing in general, but by themselves alone they cannot give a determinate concept of any thing. Such hyperbolic objects are what are called *noumena*, or pure beings of the understanding (better: beings of thought)—for example, *substance* thought of *without permanence* in time, or a *cause* that did *not act in time*, and so on, in which case one ascribes to them predicates that serve merely to make the lawfulness of experience possible, while at the same time removing from them all the conditions of intuition under which alone experience is possible; and so these concepts in turn lose all meaning.

There is no danger, however, that the understanding will of its own accord, without being pressed by alien laws, stray so

4 *A parte ante*: "on the side of what went before," i.e. an eternity without beginning.

wantonly beyond its boundaries into the field of mere beings of thought. But reason cannot be fully satisfied with any empirical use of the rules of the understanding, since that use is always still conditioned. When reason demands the completion of this chain of conditions, the understanding is driven out of its circle: partly to represent objects of experience in a series extended so far that no experience can grasp anything like it, [333] and partly even (in order to complete the series) to seek *noumena* wholly outside experience, to which reason could attach that chain and thereby, at last independent of the conditions of experience, nonetheless make its footing complete. These, then, are the transcendental ideas. According to the true but hidden purpose of our reason's natural vocation, they may be designed not for extravagant concepts but merely for the unbounded extension of the empirical use of the understanding. Nevertheless, through an unavoidable illusion, they lure the understanding into a *transcendent* use. This use, though deceptive, cannot be brought within limits by any resolution to stay inside the boundaries of experience, but only by scientific instruction and with effort.

§ 46. I. PSYCHOLOGICAL IDEAS

The I seems to give us the substantial subject, but it is no concept of an absolute subject.

It has long been observed that in all substances the subject proper—namely what remains after all accidents (as predicates) have been separated off, and hence the *substantial* itself—is unknown to us, and many complaints have been made about these limits of our insight. But it should be carefully noted here that the human understanding is not to be taken to task for failing to know the substantial in things, that is, for being unable to determine it by itself alone. It is to be taken to task, rather, for demanding to cognize it determinately, like a given object, when it is a mere idea. Pure reason demands that for every predicate of a thing we should seek the subject belonging to it, and for this

subject, which is necessarily in turn only a predicate, its subject in turn, and so on to infinity (or as far as we can reach). But it follows from this that we should take nothing we can reach to be an ultimate subject, and that the substantial itself could never be thought by our understanding, however deeply it penetrated, even if the whole of nature were laid bare to it. For the specific nature of our understanding consists in thinking everything discursively, that is, through concepts, and hence through nothing but predicates; so the absolute subject must always be lacking. Hence all the real properties through which we cognize bodies are nothing but accidents—even 334 impenetrability, which we must always represent only as the effect of a force whose subject we lack.

Now it seems as if we have this substantial element in the consciousness of ourselves (the thinking subject), and indeed in an immediate intuition. For all predicates of inner sense refer to the I as subject, and the I cannot be thought any further as the predicate of some other subject. So here the completeness in the relation of given concepts, as predicates, to a subject seems to be given in experience not merely as an idea: the object itself, the *absolute subject*, seems to be given. But this expectation is disappointed. For the I is not a concept at all,[5] but only a designation of the object of inner sense insofar as we cognize it through no further predicate. Hence, although in itself it cannot be a predicate of any other thing, it is just as little a determinate concept of an absolute subject; it is only, as in all other cases, the relation of inner appearances to their unknown subject. Nevertheless, through an entirely natural misunderstanding, this idea (which serves very well, as a regulative principle, to demolish completely all materialist explanations of the inner appearances

5 KANT'S NOTE. If the representation of apperception, the *I*, were a concept through which anything is thought, it could also be used as a predicate of other things, or would contain such predicates within itself. But it is nothing more than the feeling of an existence without the least concept, and only the representation of that to which all thinking stands in relation (*relatione accidentis*).

TRANSLATOR'S NOTE. *Relatione accidentis*: "in the relation of an accident" to its substance.

of our soul) gives rise to a very plausible argument: from this supposed cognition of the substantial in our thinking being, one infers its nature, insofar as knowledge of that nature falls entirely outside the sum total of experience.

§ 47. THE SOUL AS SUBSTANCE

Calling the thinking self a substance is empty unless its permanence can be proved.

Now this thinking self (the soul), as the ultimate subject of thinking, which cannot itself be further represented as the predicate of another thing, may well be called substance. Yet this concept remains entirely empty and without any consequences unless permanence can be proved of it—permanence being what makes the concept of substance fruitful in experience.

335 But permanence can never be proved from the concept of a substance as a thing in itself, only for the purposes of experience. This was sufficiently shown in the first Analogy of Experience (*Critique*, p. 182). And if anyone will not yield to that proof, he need only make the attempt himself: let him see whether he succeeds in proving, from the concept of a subject that does not itself exist as the predicate of another thing, that its existence is thoroughly permanent, and that it can neither arise nor pass away, either in itself or through any natural cause. Synthetic propositions *a priori* of this kind can never be proved of things in themselves, but always only in relation to things as objects of a possible experience.[6]

§ 48. THE PERMANENCE OF THE SOUL

The soul's permanence can be proved only during life, not after death.

So if we want to infer the permanence of the soul from the concept of the soul as substance, this can hold of it only for the purposes of possible experience, and not of it as a thing in itself and beyond all possible experience. Now the subjective condi-

6 The proof of the principle of the permanence of substance.

tion of all our possible experience is life. Consequently we can infer only the permanence of the soul in life. For a human being's death is the end of all experience as far as the soul as an object of experience is concerned—unless the contrary is demonstrated, which is precisely the question at issue. Thus the permanence of the soul can be demonstrated only during a human being's life (and we will surely be excused from proving that), but not after death (which is what really matters to us). And this is so for the general reason that the concept of substance, insofar as it is to be regarded as necessarily connected with the concept of permanence, can be so connected only according to a principle of possible experience, and hence only for the purposes of experience.[7]

§ 49. THE REALITY OF OUTER OBJECTS

Bodies in space are as certainly real as my soul in time; Cartesian idealism is refuted.

[336] That something actual outside us not only corresponds to our outer perceptions but must correspond to them can likewise

7 KANT'S NOTE. It is in fact very remarkable that metaphysicians have always slipped so carelessly past the principle of the permanence of substances without ever attempting a proof of it—no doubt because, as soon as they began on the concept of substance, they found themselves entirely abandoned by all means of proof. Common understanding, which was well aware that without this presupposition no unification of perceptions in one experience is possible, made up for this lack with a postulate. For it could never have drawn this principle from experience itself: partly because experience cannot follow matters (substances) through all their alterations and dissolutions far enough to find the stuff always undiminished, and partly because the principle contains *necessity*, which is always the mark of an *a priori* principle. Now the metaphysicians confidently applied this principle to the concept of the soul as a *substance*, and inferred its necessary continuation after a human being's death (especially since the simplicity of this substance, which was inferred from the indivisibility of consciousness, secured it against perishing through dissolution). Had they found the genuine source of this principle—which, however, would have required far deeper investigations than they ever cared to undertake—they would have seen that this law of the permanence of substances holds only for the purposes of experience. Hence it can hold only of things insofar as they are to be cognized in experience and connected with other things, but never of them apart from all possible experience, and so not of the soul after death either.

never be proved as a connection of things in themselves, though it can well be proved for the purposes of experience. That is to say: that something exists outside us in an empirical way, and hence as appearance in space, can very well be proved. For we have nothing to do with objects other than those that belong to a possible experience, precisely because objects that cannot be given to us in any experience are nothing for us. What is empirically outside me is what is intuited in space. And space, together with all the appearances it contains, belongs to the representations whose connection according to laws of experience proves their objective truth, just as the connection of the appearances of inner sense proves the actuality of my soul (as an object of inner sense). So by means of outer experience I am conscious of the actuality of bodies, as outer appearances in space, just as by means of inner experience I am conscious of the existence of my soul in time. My soul, too, I can cognize only as an object of inner sense, through appearances that make up an inner state; the being in itself that underlies these appearances is unknown to me. Cartesian idealism, then, only distinguishes outer experience from dreaming, and [337] lawfulness, as a criterion of the truth of the former, from the lawlessness and false illusion of the latter. In both it presupposes space and time as conditions of the existence of objects, and asks only whether the objects of the outer senses, which we place in space while awake, are actually to be found there, just as the object of inner sense, the soul, actually is in time. That is, it asks whether experience carries with it sure criteria for distinguishing it from imagination.[8] Here the doubt can easily be removed, and we always do remove it in ordinary life, by investigating the connection of appearances in both according to universal laws of experience. If the representation of outer things agrees throughout with these laws, we cannot doubt that they constitute genuine experience. Since appearances are considered as appearances only in their connection in experience, material idealism can therefore

8 Kant's name for the position, associated with Descartes's *Meditations*, that the existence of bodies outside us is doubtful and needs proof.

be removed very easily. It is just as certain an experience that bodies exist outside us (in space) as that I myself exist according to the representation of inner sense (in time). For the concept *outside us* means only existence in space. But the I in the proposition *I am* means not merely the object of inner intuition (in time) but the subject of consciousness, just as body means not merely the outer intuition (in space) but also the thing *in itself* that underlies this appearance. So the question whether bodies (as appearances of outer sense) exist as bodies in nature *outside my thoughts* can without any hesitation be answered in the negative. But the case is no different with the question whether I myself, *as an appearance of inner sense* (the soul according to empirical psychology), exist in time outside my power of representation; for this must be answered in the negative just as well. In this way everything, when brought to its true meaning, is settled and certain. Formal idealism (which I have elsewhere called transcendental) actually abolishes material or Cartesian idealism. For if space is nothing but a form of my sensibility, then as a representation in me it is just as actual as I myself am, and all that remains is the empirical truth of the appearances in it. But if that is not so—if space and the appearances in it are something existing outside us—then all the criteria of experience could never prove, beyond our perception, the actuality of these objects outside us.

§ 50. II. COSMOLOGICAL IDEAS

The cosmological idea is the product of reason that most powerfully awakens philosophy from dogmatic slumber.

[338] This product of pure reason in its transcendent use is its most remarkable phenomenon. Of all such products it is also the one that works most powerfully to awaken philosophy from its dogmatic slumber and to move it to the difficult business of the critique of reason itself.

I call this idea cosmological because it always takes its object only in the sensible world and needs no other world than the

one whose object is an object of the senses. To that extent it is native and not transcendent, and so up to that point it is not yet an idea. By contrast, to think of the soul as a simple substance already amounts to thinking of an object (the simple) such as cannot be represented to the senses at all. Nonetheless, the cosmological idea extends the connection of the conditioned with its condition (whether that connection is mathematical or dynamical) so far that experience can never keep pace with it. In this respect, therefore, it is always an idea, whose object can never be adequately given in any experience.

§ 51. THE FOUR ANTINOMIES

Kant sets out four theses and antitheses about the world, each backed by a seemingly sound proof.

Here, first of all, the usefulness of a system of categories shows itself so clearly and unmistakably that, even if there were no further proofs of it, this alone would sufficiently demonstrate their indispensability in the system of pure reason. There are no more than four such transcendent ideas, as many as there are classes of categories. In each class, however, they concern only the absolute completeness of the series of conditions for a given conditioned. Corresponding to these cosmological ideas there are also only four kinds of dialectical assertions of pure reason. Because they are dialectical, they themselves prove that each of them is opposed by a contradictory assertion resting on equally plausible principles of pure reason. No metaphysical art of the subtlest distinction can prevent this conflict; it compels the philosopher to go back to the first sources of pure reason itself. [339] This antinomy is not arbitrarily invented but grounded in the nature of human reason, and is hence unavoidable and never-ending. It contains the following four theses together with their antitheses.

1. *Thesis* The world has a beginning (boundary) in time and space *Antithesis* The world is infinite in time and space

2. *Thesis* Everything in the world consists of the *simple Antithesis* There is nothing simple; everything is *composite* 3. *Thesis* There are causes in the world through *freedom Antithesis* There is no freedom; everything is *nature*

4. *Thesis* In the series of the world's causes there is some *necessary being Antithesis* There is nothing necessary in it; in this series *everything is contingent*.

§ 52. REASON IN CONFLICT WITH ITSELF

If appearances are taken for things in themselves, reason proves contradictory propositions with equal force.

Here, now, is the strangest phenomenon of human reason, of which no example can be shown in any other use of it. Suppose that, as usually happens, we think of the appearances of the sensible world as things in themselves. Suppose we take the principles of their connection to be principles holding universally of things in themselves and not merely of experience, which [340] is just as usual—indeed, without our critique, unavoidable. Then an unexpected conflict emerges that can never be settled in the usual dogmatic way. For thesis and antithesis alike can be demonstrated by equally evident, clear and irresistible proofs—I vouch for the correctness of all these proofs—and reason thus sees itself divided against itself: a state over which the skeptic rejoices, but which must throw the critical philosopher into reflection and unease.

§ 52b. A DECISIVE EXPERIMENT

When two contradictory propositions are both false, the concept underlying them must be self-contradictory.

In metaphysics one can bungle about in all sorts of ways without having to fear being caught in untruth. For as long as one does not contradict oneself—which is quite possible with synthetic propositions, even entirely fictitious ones—we can never be refuted by experience in any of those cases where the concepts we connect are mere ideas that cannot be given in

experience at all (in their whole content). For how could we settle through experience whether the world has existed from eternity or has a beginning, whether matter is infinitely divisible or consists of simple parts? Concepts like these cannot be given in any experience, not even the greatest possible, and so the incorrectness of the affirming or the denying proposition cannot be discovered by this touchstone.

The only possible case in which reason would reveal, against its will, its secret dialectic, which it falsely passes off as dogmatics, would be this: that it grounded an assertion on a universally admitted principle, and from another, equally accredited principle inferred the exact opposite with the greatest correctness of inference. Here this case is now actual, and indeed with respect to four natural ideas of reason. From them spring four assertions on the one side and as many counter-assertions on the other, each following by correct inference from universally admitted principles. They thereby reveal the dialectical illusion of pure reason in the use of these principles, which would otherwise have had to remain hidden forever.

Here, then, is a decisive experiment, which must necessarily uncover for us an error that lies [341] hidden in the presuppositions of reason.[9] Of two mutually contradictory propositions, both cannot be false, unless the concept underlying both is itself contradictory. For example, the two propositions "a square circle is round" and "a square circle is not round" are both false. As for the first, it is false that the circle in question is round, because it is square; but it is also false that it is not round, that is, angular, because it is a circle. For the logical mark of the impossibility of a concept consists precisely in this: that on its

9 KANT'S NOTE. I therefore wish that the critical reader would occupy himself chiefly with this antinomy, because nature itself seems to have set it up in order to make reason stop short in its bold pretensions and to force it to examine itself. I undertake to answer for every proof I have given, for the thesis as well as the antithesis, and thereby to demonstrate the certainty of the unavoidable antinomy of reason. If this strange phenomenon then leads the reader to go back and examine the presupposition underlying it, he will feel compelled to investigate with me, more deeply, the first foundation of all cognition by pure reason.

presupposition two contradictory propositions would both be false at once; and hence, since no third can be thought between them, *nothing at all* is thought through that concept.

§ 52c. THE MATHEMATICAL ANTINOMIES

Both sides of the first two antinomies are false, since a sensible world existing in itself is contradictory.

Now the first two antinomies, which I call mathematical because they are concerned with adding together or dividing what is homogeneous, rest on such a contradictory concept; and from this I explain how it comes about that in both of them thesis and antithesis alike are false.

When I speak of objects in time and space, I am not speaking of things in themselves, since I know nothing of these, but only of things in appearance, that is, of experience as a particular mode of cognizing objects, one granted to human beings alone. Now of whatever I think in space or in time I must not say that it is in space and time in itself, even apart from this thought of mine. For then I would contradict myself, since space and time, together with the appearances in them, are nothing existing in themselves and outside my representations, but are themselves only modes of representation, [342] and it is plainly contradictory to say that a mere mode of representation also exists outside our representation. The objects of the senses therefore exist only in experience. To give them, on the contrary, an existence of their own, subsisting by itself, even without experience or prior to it, amounts to imagining that experience is actual even without experience or prior to it.

Now if I ask about the magnitude of the world in space and time, it is just as impossible, for all my concepts, to say that it is infinite as to say that it is finite. For neither can be contained in experience, since experience is possible neither of an *infinite* space or infinite elapsed time, nor of the *bounding* of the world by an empty space or a preceding empty time; these are only ideas. So this magnitude of the world, determined in one way or

the other, would have to lie in the world itself, apart from all experience. But this contradicts the concept of a sensible world, which is only a sum total of appearance, whose existence and connection take place only in representation, namely in experience, because it is not a thing in itself but is itself nothing but a mode of representation. From this it follows that, since the concept of a sensible world existing by itself is self-contradictory, the solution of the problem of its magnitude will also always be false, whether one attempts it affirmatively or negatively.

The same holds of the second antinomy, which concerns the division of appearances. For these are mere representations, and the parts exist merely in the representation of them, hence in the division—that is, in a possible experience in which they are given—and the division therefore goes only as far as possible experience reaches. To assume that an appearance, for example that of a body, contains in itself, prior to all experience, all the parts that possible experience can ever reach, is to give a mere appearance, which can exist only in experience, an existence of its own that precedes experience; or it is to say that mere representations are there before they are encountered in the power of representation. This contradicts itself, and so, therefore, does every solution of this misunderstood problem, whether one asserts in it that bodies in themselves consist of infinitely many parts or of a finite number of simple parts.

§ 53. THE DYNAMICAL ANTINOMIES: NATURE AND FREEDOM

Both sides can be true: natural necessity holds of appearances, freedom of things in themselves.

[343] In the first class of the antinomy (the mathematical), the falsity of the presupposition consisted in this: that what contradicts itself (namely appearance as a thing in itself) was represented as compatible in one concept. As for the second class of the antinomy, the dynamical, the falsity of the presupposition consists in this: that what is compatible is represented as contradictory.

Consequently, whereas in the first case both opposed assertions were false, here, conversely, assertions that are opposed to each other through mere misunderstanding can both be true.

For mathematical connection necessarily presupposes homogeneity of what is connected (in the concept of magnitude); dynamical connection by no means requires this. When it is a matter of the magnitude of something extended, all the parts must be homogeneous with one another and with the whole. In the connection of cause and effect, by contrast, homogeneity may indeed be found, but it is not necessary; for the concept of causality (by means of which, through something, something else entirely different from it is posited) at least does not require it.

If the objects of the sensible world were taken for things in themselves, and the laws of nature cited above for laws of things in themselves, the contradiction would be unavoidable. Likewise, if the subject of freedom were represented, like other objects, as mere appearance, the contradiction could just as little be avoided; for the very same thing would be affirmed and denied of one and the same object in the same sense. But if natural necessity is referred merely to appearances, and freedom merely to things in themselves, then no contradiction arises if we assume or concede both kinds of causality, however difficult or impossible it may be to make the latter kind comprehensible.

In appearance every effect is an event, or something that happens in time. According to the universal law of nature, it must be preceded by a determination of the causality of its cause (a state of the cause), upon which it follows according to a constant law. But this determination of the cause to causality must also be something that *takes place* or *happens*: the cause must have *begun* to *act*, for otherwise no temporal sequence could be [344] thought between it and the effect. The effect would always have been there, like the causality of the cause. Therefore, among appearances, the *determination* of the cause *to act* must also have arisen, and so must be an event just as much as its effect is—an event that must in turn have its cause, and so on; and con-

sequently natural necessity must be the condition according to which efficient causes are determined. If, on the other hand, freedom is to be a property of certain causes of appearances, then, with respect to appearances as events, it must be a faculty of beginning them *of itself* (*sponte*), that is, without the causality of the cause itself having to begin, so that it would need no other ground to determine its beginning. But then the *cause*, as to its causality, would have to be not subject to temporal determinations of its state, that is, it would have to be *not an appearance* at all; that is, it would have to be taken as a thing in itself, and only the *effects* as *appearances*.[1011] If such an influence of beings of the understanding on appearances can be thought without contradiction, then natural necessity will indeed attach to all connection of cause and effect in the sensible world; yet freedom can be granted to that cause which is itself not an appearance (though it underlies appearance). Nature and freedom can thus be attributed without contradiction to the very same thing, but in different relations—in the one case as appearance, in the other as a thing in itself.

We have in ourselves a faculty that is not merely connected with its subjectively determining grounds, which are the natural causes of its actions [345] —and to that extent it is the faculty of a being that itself belongs to appearances—but is also related to

10 KANT'S NOTE. The idea of freedom has its place solely in the relation of the *intellectual*, as cause, to *appearance*, as effect. Hence we cannot attribute freedom to matter with respect to the unceasing action by which it fills its space, even though this action takes place from an inner principle. Just as little can we find any concept of freedom that fits pure beings of the understanding, for example God, insofar as his action is immanent. For his action, though independent of external determining causes, is nevertheless determined in his eternal reason, and hence in the divine *nature*. Only if *something is to begin* through an action, and hence the effect is to be found in the time series, and so in the sensible world (for example, the beginning of the world), does the question arise whether the causality of the cause must itself also begin, or whether the cause can initiate an effect without its causality itself beginning. In the first case the concept of this causality is a concept of natural necessity; in the second, a concept of freedom. From this the reader will see that, in defining freedom as the faculty of beginning an event of itself, I hit upon exactly the concept that is the problem of metaphysics.

11 *Sponte*: Latin, "of its own accord, spontaneously."

objective grounds that are mere ideas, insofar as these can determine this faculty. This connection is expressed by *ought*. This faculty is called *reason*. Insofar as we consider a being (the human being) solely according to this objectively determinable reason, it cannot be regarded as a sensible being; rather, the property in question is the property of a thing in itself. We cannot comprehend at all how this property is possible—how, namely, the *ought*, which has never yet happened, could determine the being's activity and be the cause of actions whose effect is appearance in the sensible world. Nevertheless, the causality of reason with respect to effects in the sensible world would be freedom, insofar as *objective grounds*, which are themselves ideas, are regarded as determining with respect to those effects. For its action would then not depend on subjective conditions, hence not on any temporal conditions, and so not on the law of nature that serves to determine these; for grounds of reason give the rule to actions universally, from principles, without the influence of circumstances of time or place.

What I adduce here serves only as an example, to make things intelligible, and does not necessarily belong to our question, which must be decided from mere concepts, independently of properties that we encounter in the actual world.

Now I can say without contradiction: all actions of rational beings, insofar as they are appearances (are encountered in some experience), are subject to natural necessity; but the very same actions, considered merely with respect to the rational subject and its faculty of acting according to mere reason, are free. For what is required for natural necessity? Nothing more than the determinability of every event in the sensible world according to constant laws, and hence a relation to a cause in appearance, while the thing in itself that underlies it, and its causality, remain unknown. But I say: *the law of nature remains*, whether the rational being is the cause of effects in the sensible world from reason, and hence through freedom, or whether it does not determine those effects from grounds of reason. For if the former, the action takes place according to maxims whose

effect in appearance will always conform to constant laws; if the
346 latter, and the action does not take place according to principles of reason, then it is subject to the empirical laws of sensibility. In both cases the effects hang together according to constant laws; and we demand nothing more for natural necessity—indeed, we know nothing more of it. But in the first case reason is the cause of these natural laws and is therefore free; in the second case the effects run according to mere natural laws of sensibility, because reason exercises no influence on them. Reason itself, however, is not on that account determined by sensibility (which is impossible), and so it is free in this case too. Freedom therefore does not hinder the natural law of appearances, any more than this law infringes on the freedom of the practical use of reason, which stands in connection with things in themselves as determining grounds.

In this way practical freedom—namely the freedom in which reason has causality according to objectively determining grounds—is rescued, without the least harm being done to natural necessity with respect to the very same effects as appearances. This can also help to elucidate what we had to say about transcendental freedom and its compatibility with natural necessity (in the same subject, but not taken in one and the same relation). For as regards transcendental freedom, every beginning of a being's action from objective causes is, with respect to these determining grounds, always a *first beginning*, although the same action in the series of appearances is only a *subaltern beginning*. It must be preceded by a state of the cause that determines it, and this state is in the same way determined by one still earlier. So in rational beings, or in beings generally insofar as their causality is determined in them as things in themselves, one can think a faculty of beginning a series of states of itself, without falling into contradiction with laws of nature. For the relation of the action to objective grounds of reason is not a temporal relation. Here what determines the causality does not precede the action in time, because such determining grounds represent not a relation of objects to the

senses, and hence not to causes in appearance, but determining causes as things in themselves, which are not subject to temporal conditions. Thus the action can be regarded, with respect to the causality of reason, as a first beginning, and yet at the same time, with respect to the series [347] of appearances, as a merely subordinate beginning; and without contradiction it can be regarded in the former respect as free, and in the latter (since it is mere appearance) as subject to natural necessity.

As for the *fourth* antinomy, it is removed in a way similar to reason's conflict with itself in the third. For if the *cause in appearance* is simply distinguished from the *cause of appearances*, insofar as the latter can be thought as a *thing in itself*, then both propositions can well stand side by side: namely, that nowhere in the sensible world is there a cause (according to similar laws of causality) whose existence is absolutely necessary; and likewise, on the other side, that this world is nevertheless connected with a necessary being as its cause (but of a different kind and according to a different law). The incompatibility of these two propositions rests solely on the misunderstanding of extending what holds merely of appearances to things in themselves, and in general of confusing the two in one concept.

§ 54. WHAT THE ANTINOMY TEACHES

The antinomy compels the reader to reexamine the deduction of all cognition a priori.

This, then, is the presentation and the solution of the whole antinomy in which reason finds itself entangled when it applies its principles to the sensible world. The presentation alone would already be a considerable service to our knowledge of human reason, even if the solution of this conflict should not yet have fully satisfied the reader, who here has to fight against a natural illusion that has only recently been shown to him to be one, after he had always taken it for true. For one consequence of this is inescapable. Since it is entirely impossible to get out of this conflict of reason with itself as long as one takes the objects of

the sensible world for things in themselves, and not for what they in fact are, namely mere appearances, the reader will thereby be compelled to take up once more the deduction of all our cognition *a priori*, and the examination of the deduction I have given of it, in order to reach a decision on the matter. I ask no more for now. For once, in this occupation, he has first thought himself deeply enough into the nature of pure reason, the concepts through which alone the solution of the [348] conflict of reason is possible will already be familiar to him. Without this, I cannot expect complete assent even from the most attentive reader.

§ 55. III. THE THEOLOGICAL IDEA

The ideal of pure reason is easily recognized as an idea; the Critique has settled its claims.

The third transcendental idea, which provides material for the most important use of reason of all—a use, however, that is extravagant (transcendent) when pursued merely speculatively, and for that very reason dialectical—is the ideal of pure reason. Here reason does not, as with the psychological and cosmological ideas, start from experience and let itself be led, by ascending through grounds, to strive if possible for the absolute completeness of their series. Instead it breaks off entirely and, from mere concepts of what would constitute the absolute completeness of a thing in general, and hence by means of the idea of a supremely perfect original being, descends to the determination of the possibility, and hence also the actuality, of all other things. So here the mere presupposition of a being which, though not in the series of experience, is nonetheless thought for the purposes of experience, for the sake of making the connection, order and unity of experience comprehensible—that is, the *idea*, is easier to distinguish from the concept of the understanding than in the previous cases. Hence the dialectical illusion that arises here—from our taking the subjective conditions of our thinking for objective conditions of things themselves,

and a hypothesis that is necessary for the satisfaction of our reason for a dogma—could easily be set before our eyes. I therefore have nothing further to remark about the pretensions of transcendental theology, since what the *Critique* says on the matter is comprehensible, evident and decisive.

§ 56. GENERAL REMARK ON THE TRANSCENDENTAL IDEAS

Questions raised by reason's own ideas can be answered, because the ideas are regulative, not constitutive.

The objects given to us through experience are incomprehensible to us in many respects. And many questions to which [349] the law of nature leads us cannot be solved at all when they are pursued to a certain height, though always in conformity with these laws—for example, why bits of matter attract one another. But if we leave nature altogether, or in following out its connections go beyond all possible experience and so immerse ourselves in mere ideas, then we cannot say that the object is incomprehensible to us and that the nature of things sets us insoluble problems. For then we are not dealing with nature, or with given objects at all, but merely with concepts that have their origin solely in our reason, and with mere beings of thought. With regard to these, every problem that arises from their concept must be capable of solution, because reason certainly can and must give a complete account of its own procedure[12]. Since the psychological, cosmological and theological ideas are all pure

12 KANT'S NOTE. Hence Mr. Platner, in his *Aphorisms*, § 728, 729, says shrewdly: "If reason is a criterion, then no concept can be possible that is incomprehensible to human reason.—Incomprehensibility occurs only in what is actual. Here incomprehensibility arises from the inadequacy of the ideas we have acquired."—So it only sounds paradoxical, and is otherwise not strange, to say that in nature much is incomprehensible to us (for example, the power of reproduction), but that if we climb higher still and even go beyond nature, everything becomes comprehensible to us again. For we then leave entirely the *objects* that can be given to us and occupy ourselves merely with ideas. In these we can quite well comprehend the law that reason, through them, prescribes to the understanding for its use in experience, because that law is reason's own product.

TRANSLATOR'S NOTE. Ernst Platner (1744–1818), Leipzig physician and philosopher; his *Philosophische Aphorismen* appeared 1776–82.

concepts of reason, which cannot be given in any experience, the questions that reason puts to us about them are set for us not by the objects but by mere maxims of reason, for the sake of its own satisfaction. They must therefore all be capable of a sufficient answer. And this is in fact done by showing that they are principles for bringing our use of the understanding to thoroughgoing agreement, completeness and synthetic unity, and that to this extent they hold only of experience—but of experience as a *whole*. Now although an absolute whole of experience is impossible, the idea of a whole of cognition according to principles in general is what alone can give cognition a special kind of unity, namely that of a system. Without this unity our cognition is nothing but piecework and [350] cannot be used for the highest end (which is always only the system of all ends). By this I mean not merely the practical end but also the highest end of the speculative use of reason.

The transcendental ideas therefore express the peculiar vocation of reason, namely as a principle of the systematic unity of the use of the understanding. But suppose one regards this unity of the way of cognizing as if it attached to the object of cognition. Suppose one takes it, though it is really merely *regulative*, to be *constitutive*, and persuades oneself that by means of these ideas one can extend one's knowledge far beyond all possible experience, and so in a transcendent way—whereas it serves merely to bring experience within itself as near to completeness as possible, that is, to restrict its progress by nothing that cannot belong to experience. Then this is a mere misunderstanding in judging the proper vocation of our reason and its principles, and a dialectic that partly confuses the empirical use of reason and partly sets reason at odds with itself.

§ 57. CONCLUSION: ON DETERMINING THE BOUNDARIES OF PURE REASON

Reason cannot know beyond experience yet must think beyond it; boundaries differ from mere limits.

After the very clear proofs we have given above, it would be absurd for us to hope to cognize more of any object than belongs to possible experience of it. It would be just as absurd to lay claim to even the least cognition of any thing that we assume is not an object of possible experience, so as to determine it according to its constitution as it is in itself. For by what means would we carry out this determination? Time, space and all the concepts of the understanding—and still more the concepts drawn from empirical intuition or *perception* in the world of sense—have, and can have, no other use than merely to make experience possible. And if we leave out this condition even from the pure concepts of the understanding, they then determine no object whatever and have no meaning at all.

On the other hand, it would be an even greater absurdity if we were to admit no things in themselves at all, or to pass off our experience [351] as the only possible way of cognizing things—and so our intuition in space and time as the only possible intuition, and our discursive understanding as the archetype of every possible understanding—and thus wanted the principles of the possibility of experience to be taken for universal conditions of things in themselves.

Our principles, which restrict the use of reason merely to possible experience, could accordingly themselves become *transcendent*, and pass off the limits of our reason as limits of the possibility of things themselves—as *Hume's Dialogues* may serve to illustrate—if a careful critique did not guard the boundaries of our reason even with respect to its empirical use, and set a stop to its pretensions. Skepticism originally sprang from metaphys-

ics and its unpoliced dialectic.[13] At first it may well have declared everything that goes beyond the empirical use of reason null and deceptive, merely in favor of that use. But gradually people became aware that it is the very same *a priori* principles we employ in experience that, unnoticed and, as it seemed, with just the same right, led further than experience reaches. And so they began to cast doubt even on the principles of experience. There is no real danger in this, for sound understanding will surely always assert its rights here. But a peculiar confusion did arise in science, which cannot determine how far reason is to be trusted, and why only that far and no further. This confusion can be remedied, and every relapse prevented in future, only by a formal determination of the boundaries of our use of reason, drawn from principles.

It is true: beyond all possible experience we can give no determinate concept of what things in themselves may be. Yet we are not free to abstain entirely from inquiring after them. For experience never fully satisfies reason; in answering our questions it refers us ever further back and leaves us unsatisfied as to their complete resolution. Anyone can see this well enough from the dialectic of pure reason, which for just this reason has its good subjective ground. Who can bear it that, with regard to the nature of our soul, we should come as far as a clear consciousness of the subject, and at the same time to the conviction that its appearances cannot be explained *materialistically*, [352] without asking what the soul really is—and, if no concept of experience suffices for this, assuming at any rate a concept of reason (that of a simple immaterial being) merely for this purpose, even though we cannot demonstrate its objective reality at all? Who can be satisfied with mere cognition from experience in all the cosmological questions—about the duration and magnitude of the world, about freedom or natural necessity—when, however we go about it, every answer given according to principles of experience always gives birth to a new question, which

13 David Hume, *Dialogues Concerning Natural Religion*, published posthumously in 1779.

likewise demands an answer, and thereby plainly shows that all physical modes of explanation are inadequate to satisfy reason? Finally, given the thoroughgoing contingency and dependence of everything he can think and assume only according to principles of experience, who does not see that it is impossible to stop there? And who does not feel compelled—despite every prohibition against losing himself in transcendent ideas—to seek rest and satisfaction beyond all the concepts he can justify through experience, in the concept of a being? The idea of such a being cannot indeed be seen into as to its possibility in itself, though it cannot be refuted either, because it concerns a mere being of the understanding; yet without it reason would have to remain forever unsatisfied.

Boundaries (in extended beings) always presuppose a space that is found outside a certain determinate place and encloses it. Limits need nothing of the kind; they are mere negations that affect a magnitude insofar as it lacks absolute completeness. Our reason, however, sees around itself, as it were, a space for the cognition of things in themselves, although it can never have determinate concepts of them and is restricted to appearances alone.

As long as the cognition of reason is homogeneous, no determinate boundaries to it can be thought. In mathematics and natural science, human reason does recognize limits, but no boundaries: that is, it recognizes that something lies outside it which it can never reach, but not that it will itself ever be completed at any point in its inner progress. The extension of insight in mathematics, and the possibility of ever new inventions, goes on to infinity; so does the discovery of new properties of nature, new forces and laws, through continued experience and their unification by reason. Nevertheless, limits here are unmistakable. For mathematics deals [353] only with *appearances*, and whatever cannot be an object of sensible intuition—such as the concepts of metaphysics and morality—lies entirely outside its sphere. It can never lead there; but then it has no need of them at all. There is therefore no continuous progress toward, and

approach to, these sciences—no point or line of contact, as it were. Natural science will never reveal to us the inner nature of things, that is, what is not appearance but can nonetheless serve as the highest ground for explaining appearances. But it does not need this for its physical explanations. Indeed, even if something of the kind were offered to it from elsewhere (for example, the influence of immaterial beings), it ought to reject it and not bring it into the course of its explanations at all. It should always ground these only on what, as an object of the senses, can belong to experience and be brought into connection with our actual perceptions according to laws of experience.

Metaphysics, however, leads us to boundaries in the dialectical attempts of pure reason (which are not begun arbitrarily or wantonly, but are driven by the nature of reason itself). And the transcendental ideas—precisely because we cannot do without them, and yet they will never let themselves be realized—serve to show us not only the actual boundaries of the pure use of reason but also the way to determine them. This, too, is the end and use of this natural disposition of our reason, which has given birth to metaphysics as its favorite child. Its generation, like every other in the world, is to be ascribed not to random chance but to an original germ, wisely organized for great ends. For metaphysics, perhaps more than any other science, is placed in us in its basic features by nature itself, and cannot be regarded at all as the product of an arbitrary choice, or as a chance extension in the progress of experience (from which it wholly separates itself).

With all its concepts and laws of the understanding, which suffice for its empirical use and so within the world of sense, reason still finds no satisfaction for itself. For questions that keep recurring to infinity rob it of all hope of resolving them completely. The transcendental ideas, which aim at this completion, are such problems [354] of reason. Now reason sees clearly that the world of sense cannot contain this completion—nor, therefore, can any of the concepts that serve solely for understanding that world: space and time, and everything we have lis-

ted under the name of pure concepts of the understanding. The world of sense is nothing but a chain of appearances connected according to universal laws. It therefore has no subsistence of its own; it is not really the thing in itself, and so it necessarily refers to what contains the ground of this appearance—to beings that can be cognized not merely as appearance but as things in themselves. Only in the cognition of these can reason hope to see its demand for completeness, in the progress from the conditioned to its conditions, satisfied at last.

Above (§ 33, 34) we pointed out the limits of reason with regard to all cognition of mere beings of thought. Now, since the transcendental ideas nonetheless make it necessary for us to advance to them, and have thus led us, as it were, right up to where the full space (of experience) touches the empty one (of which we can know nothing—the *noumena*), we can also determine the boundaries of pure reason. For in all boundaries there is also something positive (for example, a surface is the boundary of corporeal space and yet is itself a space; a line is a space that is the boundary of a surface; a point is the boundary of a line and yet still a place in space), whereas limits contain mere negations. The limits indicated in the section cited are not yet enough, now that we have found that something lies beyond them (even though we shall never cognize what it is in itself). For now the question arises: how does our reason conduct itself in this connection of what we know with what we do not know and never shall? Here there is a real connection of the known with something wholly unknown (which it will always remain). And even if the unknown should not become the least bit better known through it—as indeed is not to be hoped—the concept of this connection must still be capable of being determined and brought to distinctness.

We are therefore to think an immaterial being, a world of the understanding, and a highest of all beings (all of them noumena), because only in these, as things in themselves, does reason meet with the completion and satisfaction that it can never hope for in deriving appearances from their [355] homogen-

eous grounds. And we are to think them because appearances really do refer to something distinct from them (and therefore wholly heterogeneous), since appearances always presuppose a thing in itself and so point to it, whether or not we can cognize it more closely.

But we can never cognize these beings of the understanding as they may be in themselves, that is, determinately; and yet we must assume them in relation to the world of sense and connect them with it through reason. So we shall at least be able to think this connection by means of concepts that express their relation to the world of sense. For if we think the being of the understanding through nothing but pure concepts of the understanding, we really think nothing determinate by it, and so our concept is without meaning. If we think it through properties borrowed from the world of sense, it is no longer a being of the understanding: it is thought as one of the phenomena and belongs to the world of sense. Let us take an example from the concept of the highest being.

The *deistic* concept is an entirely pure concept of reason. But it represents only a thing that contains all reality, without being able to determine a single one of those realities, because for that an example would have to be borrowed from the world of sense —in which case I would always be dealing only with an object of the senses, not with something entirely heterogeneous that cannot be an object of the senses at all. For suppose I ascribed understanding to it. I have no concept whatever of an understanding other than one like my own, namely one to which intuitions must be given through the senses, and which occupies itself with bringing them under rules of the unity of consciousness. But then the elements of my concept would always lie in appearance. Yet it was precisely the inadequacy of appearances that compelled me to go beyond them to the concept of a being that does not depend on appearances at all, nor is bound up with them as conditions of its determination. If, on the other hand, I separate the understanding from sensibility in order to have a pure understanding, nothing remains but the mere form

of thinking without intuition, through which alone I can cognize nothing determinate, and so no object. For that I would have to think another understanding, one that intuited objects. But of such an understanding I have not the least concept, because the human understanding is discursive and can cognize [356] only through universal concepts. The same thing happens to me when I ascribe a will to the highest being. For I have this concept only by drawing it from my inner experience. But underlying it is my dependence, for my contentment, on objects whose existence we need—and hence sensibility—which flatly contradicts the pure concept of the highest being.

Hume's objections to deism are weak; they never strike anything more than the proofs, never the thesis of the deistic assertion itself. But with respect to theism, which is supposed to come about through a closer determination of our concept of the highest being—there merely transcendent—they are very strong. Depending on how one frames this concept, they are irrefutable in certain cases (in fact in all the usual ones). Hume always insists that through the mere concept of an original being, to which we ascribe no predicates but ontological ones (eternity, omnipresence, omnipotence), we really think nothing determinate at all. Properties would have to be added that can yield a concept *in concreto*. It is not enough, he says, to say that this being is a cause; one must say how its causality is constituted—for instance, through understanding and will. And this is where his attacks on the matter itself, namely on theism, begin, whereas before he had only stormed the arguments for deism, which carries no particular danger. His dangerous arguments all concern anthropomorphism. He holds that it is inseparable from theism and makes theism self-contradictory; but that if it were dropped, theism would fall with it, and nothing would remain but a deism of which nothing can be made, which is of no use to us and can serve as no foundation at all for religion and morals. If this inevitability of anthropomorphism were certain, then the proofs of the existence of a highest being might be whatever they like, and might all be granted: the concept of this

being could still never be determined by us without entangling us in contradictions.

If we join the prohibition against all transcendent judgments of pure reason with the command, apparently in conflict with it, to go beyond to concepts that lie outside the field of immanent (empirical) use, we become aware that the two can coexist—but only right on the *boundary* of all permissible use of reason. For this boundary belongs as much to the field [357] of experience as to that of beings of thought. And we are thereby taught at the same time how those remarkable ideas serve solely to determine the boundaries of human reason: on the one hand, not to extend cognition from experience without bound, so that nothing would remain for us to cognize but merely the world; and on the other hand, still not to go beyond the boundary of experience and try to judge of things outside it as things in themselves.

We keep to this boundary, however, if we restrict our judgment merely to the relation that the world may have to a being whose very concept lies outside all the cognition of which we are capable within the world. For then we do not attribute to the highest being *in itself* any of the properties through which we think objects of experience, and we thereby avoid *dogmatic* anthropomorphism. But we do ascribe them to its relation to the world, and allow ourselves a *symbolic* anthropomorphism, which in fact concerns only language and not the object itself.

When I say that we are compelled to regard the world *as if* it were the work of a highest understanding and will, I am really saying nothing more than this: as a watch, a ship, a regiment is related to the craftsman, the builder, the commander, so the world of sense (or everything that makes up the basis of this sum total of appearances) is related to the unknown. This unknown I thereby cognize not as it is in itself, but as it is for me, namely with respect to the world of which I am a part.

§ 58. COGNITION BY ANALOGY

We may think the highest being only by analogy, through the world's relation to it, avoiding dogmatic anthropomorphism.

Such cognition is cognition *by analogy*. Analogy does not mean here, as the word is commonly taken, an imperfect similarity between two things, but a perfect similarity between two relations among quite dissimilar things[14]. By means of this [358] analogy there still remains a concept of the highest being sufficiently determinate *for us*, even though we have left out everything that could *determine* it absolutely and *in itself*. For we do determine it with respect to the world, and hence with respect to ourselves, and more than that we do not need. The attacks that *Hume* makes on those who want to determine this concept absolutely, by borrowing the materials for it from themselves and from the world, do not touch us. Nor can he reproach us that nothing at all would remain for us if objective anthropomorphism were taken away from the concept of the highest being.

For suppose that at first we are granted, as a necessary hypothesis (as Hume too grants, in the person of Philo against Cleanthes in his *Dialogues*), the *deistic* concept of the original being, in which one thinks the original being through purely ontological

14 KANT'S NOTE. Thus there is an analogy between the rightful relation of human actions and the mechanical relation of moving forces. I can never do anything against another without giving him a right to do the very same against me under the same conditions; just as no body can act on another with its moving force without thereby causing the other to act back on it just as much. Here right and moving force are entirely dissimilar things, yet in their relation there is complete similarity. By means of such an analogy I can therefore give a relational concept of things that are absolutely unknown to me. For example: as the promotion of the happiness of children (= a) is to the love of parents (= b), so the welfare of the human race (= c) is to the unknown in God (= x) that we call love. This is not as if that unknown had the least similarity to any human inclination, but because we can posit its relation to the world as similar to the relation that things in the world have to one another. The relational concept here, however, is a mere category, namely the concept of cause, which has nothing to do with sensibility.

predicates of substance, cause, etc.[15] (*which one must do*, because reason, driven on in the world of sense by nothing but conditions that are always conditioned in turn, can otherwise have no satisfaction at all; and *which one can also rightly do* without falling into anthropomorphism—which transfers predicates from the world of sense to a being entirely distinct from the world—since those predicates are mere categories, which give no determinate concept of it, but for that very reason also no concept restricted to conditions of sensibility); then nothing can prevent us from predicating of this being a *causality through reason* with respect to the world, and so passing over to theism, without being compelled to ascribe this reason to it in itself, as a property inhering in it. For as to the *first* point: the only possible way to drive the use of reason [359] with respect to all possible experience in the world of sense to the highest degree of thoroughgoing agreement with itself is to assume, in turn, a highest reason as a cause of all connections in the world. Such a principle must be advantageous to reason throughout, and can nowhere harm it in its use on nature. *Second*, however, reason is thereby not transferred as a property to the original being in itself, but only *to its relation* to the world of sense; and so anthropomorphism is entirely avoided. For here we consider only the *cause* of the rational form that is found everywhere in the world. Reason is indeed ascribed to the highest being insofar as it contains the ground of this rational form of the world, but only by analogy—that is, only insofar as this expression indicates the relation that the supreme cause, unknown to us, has to the world, so as to determine everything in it in the highest degree in conformity with reason. In this way we are prevented from using the property of reason to think God; instead we use it to think the world, as is necessary in order to have the greatest possible use of reason with respect to the world according to one principle. We thereby admit that the highest being, as to what it is in itself, is wholly inscrutable to us, and even unthink-

15 In Hume's *Dialogues*, Philo is the skeptic and Cleanthes the defender of the argument from design.

able *in a determinate way*. We are thereby kept, on the one hand, from making any transcendent use of the concepts we have of reason as an efficient cause (by means of the will), in order to determine the divine nature through properties that are always borrowed only from human nature, and from losing ourselves in crude or visionary concepts. On the other hand, we are kept from flooding the contemplation of the world with hyperphysical modes of explanation, according to our concepts of human reason transferred to God, and from diverting it from its proper vocation—according to which it is to be a study of mere nature by reason, not a presumptuous derivation of its appearances from a highest reason. The expression suited to our weak concepts will be this: we think the world *as if* it derived, in its existence and inner determination, from a highest reason. By this we cognize, on the one hand, the constitution that belongs to the world itself, without presuming to want to determine that of its cause in itself. On the other hand, we place the ground of this constitution (the rational form [360] in the world) *in the relation* of the supreme cause to the world, without finding the world sufficient for this by itself[16].

In this way the difficulties that seem to stand in the way of theism disappear. This happens by joining to *Hume's* principle—not to push the use of reason dogmatically beyond the field of all possible experience—another principle that Hume entirely overlooked, namely: not to regard the field of possible experience as something that, in the eyes of our reason, bounds itself. Critique of reason here marks out the true middle way between the dogmatism that Hume fought and the skepticism he wanted to introduce in its place. It is a middle way unlike other middle ways, which people advise us to determine for ourselves mech-

16 KANT'S NOTE. I will say: the causality of the supreme cause is, with respect to the world, what human reason is with respect to its works of art. The nature of the supreme cause itself remains unknown to me in this. I merely compare its effect, which I do know (the order of the world), and that effect's conformity to reason, with the effects of human reason that I know; and so I call the former a reason, without thereby ascribing to it, as its property, the very thing I understand by this expression in human beings, or anything else known to me.

anically, as it were (something from the one and something from the other), and by which no one learns anything better. It is instead one that can be determined exactly according to principles.

§ 59. STANDING ON THE BOUNDARY

Reason reaches up to the boundary of experience; natural theology is a concept on that boundary.

At the beginning of this remark I made use of the image of a *boundary* in order to fix the limits of reason with respect to the use appropriate to it. The world of sense contains mere appearances, which are not things in themselves; the understanding must therefore assume the latter (noumena), precisely because it cognizes the objects of experience as mere appearances. Both are comprised together in our reason, and the question is: how does reason proceed in setting boundaries to the understanding with respect to both fields? Experience, which contains everything that belongs to the world of sense, does not bound itself: from every conditioned it only ever reaches another conditioned. What is to bound it must lie wholly outside it, and this is the field of pure beings of the understanding. This field, however, is an empty space for us insofar as the *determination* of the nature of these beings of the understanding [361] is concerned; and to that extent, where dogmatically determinate concepts are in question, we cannot get beyond the field of possible experience. But since a boundary is itself something positive, which belongs both to what lies within it and to the space lying outside a given sum total, it is nonetheless a real, positive cognition, which reason acquires merely by extending itself up to this boundary—yet in such a way that it does not attempt to go beyond it, because there it finds before it an empty space in which it can indeed think forms for things, but no things themselves. But the *bounding* of the field of experience by something otherwise unknown to reason is still a cognition that remains to reason at this standpoint. Through it reason is neither shut up within the

world of sense nor straying into visionary fanaticism outside it, but—as befits a knowledge of the boundary—restricts itself merely to the relation of what lies outside the boundary to what is contained within it.

Natural theology is such a concept on the boundary of human reason. For reason finds itself compelled to look out toward the idea of a highest being (and, in a practical respect, toward that of an intelligible world as well). It does so not in order to determine anything with regard to this mere being of the understanding, and so outside the world of sense, but only in order to guide its own use within that world according to principles of the greatest possible (theoretical as well as practical) unity, and for this purpose to make use of the world's relation to a self-subsistent reason as the cause of all these connections. In doing so it does not merely *invent* a being for itself. Rather, since outside the world of sense there must necessarily be something that only the pure understanding thinks, it only *determines* this something in this way—though of course merely by analogy.

In this way our proposition above, which is the result of the whole *Critique*, stands firm: "that reason, through all its *a priori* principles, never teaches us anything more than objects of possible experience alone, and of these nothing more than what can be cognized in experience." But this restriction does not prevent reason from leading us up to the objective *boundary* of experience, namely to the *relation* to something that is not itself an object of experience but must nonetheless be the highest ground of all experience. Yet reason teaches us nothing about this something in itself, but only in relation to reason's own complete use in the field of possible experience, a use directed to [362] the highest ends. This, however, is also all the benefit that one can reasonably even wish for here, and one has cause to be content with it.

§ 60. THE NATURAL PURPOSE OF METAPHYSICS

The ideas guard against materialism, naturalism and fatalism, and so make room for morality.

Thus we have presented in detail metaphysics as it is actually given *in the natural disposition* of human reason—and indeed in what constitutes the essential end of pursuing it—according to its subjective possibility. We found, however, that this *merely natural* use of such a disposition of our reason, if no discipline (which is possible only through scientific critique) bridles it and sets it within limits, entangles it in overreaching *dialectical* inferences, some merely illusory, some even in conflict with one another; and further, that this sophistical metaphysics is dispensable for the advancement of the cognition of nature, and may well even be detrimental to it. It therefore still remains a problem worth investigating to discover the *ends of nature* at which this disposition in our nature toward transcendent concepts may be aimed, since everything that lies in nature must originally be designed for some useful purpose.

Such an inquiry is indeed precarious. I also confess that what I am able to say about it is only conjecture, like everything that concerns the first ends of nature. And that alone may be permitted to me in this case, since the question concerns not the objective validity of metaphysical judgments but the natural disposition toward them, and so lies outside the system of metaphysics, in anthropology.

Consider all the transcendental ideas together, whose sum total constitutes the proper problem of natural pure reason—the problem that compels it to leave the mere contemplation of nature, to go beyond all possible experience, and in this endeavor to bring about the thing (be it knowledge or sophistry) called metaphysics. When I take them together, I believe I perceive that this natural disposition is aimed at freeing our concept from the fetters of experience and the limits of the mere contemplation of nature far enough that it at least sees a field

opened before it that contains mere objects for the pure understanding, which no sensibility can reach. The purpose is not that we should occupy ourselves with these objects speculatively (for we find no ground [363] on which to gain a foothold). It is rather that practical principles should find such a space before them for their necessary expectation and hope; without it they could not extend themselves to the universality that reason unavoidably requires for moral purposes.

Now I find that the *psychological* idea—however little I may thereby see into the pure nature of the human soul, which is exalted above all concepts of experience—at least shows the inadequacy of those concepts clearly enough. It thereby leads me away from materialism, as a psychological concept that is fit for no explanation of nature and moreover narrows reason in its practical respect. In the same way the *cosmological* ideas, through the evident inadequacy of all possible cognition of nature to satisfy reason in its legitimate inquiry, serve to keep us from naturalism, which would pass nature off as sufficient unto itself. Finally, all natural necessity in the world of sense is always conditioned, since it always presupposes the dependence of things on others; and unconditioned necessity must be sought only in the unity of a cause distinct from the world of sense. Yet the causality of that cause, if it were in turn merely nature, could never make the existence of the contingent comprehensible as its consequence. So by means of the *theological* idea reason frees itself from fatalism—both from a blind natural necessity in the connection of nature itself, without a first principle, and from such necessity in the causality of this principle itself—and leads to the concept of a cause through freedom, and hence of a supreme intelligence. Thus the transcendental ideas serve, if not to instruct us positively, then at least to cancel the insolent assertions of *materialism*, *naturalism* and *fatalism*, which narrow the field of reason, and thereby to make room for the moral ideas outside the field of speculation. And this, it seems to me, would to some extent explain that natural disposition.

The practical use that a merely speculative science may have lies outside the boundaries of that science. It can therefore be regarded only as a scholium, and, like all scholia, does not belong to the science itself as a part of it. Nonetheless this relation lies at least within the boundaries of philosophy, especially of the philosophy that draws from pure sources of reason, where the speculative use of reason in metaphysics must necessarily 364 be at one with its practical use in morality. Hence the unavoidable dialectic of pure reason, in a metaphysics regarded as a natural disposition, deserves to be explained not merely as an illusion that needs to be dispelled, but also, if possible, as an *arrangement of nature* with respect to its end—although this task, as going beyond what is owed, cannot rightly be demanded of metaphysics proper.[17]

A second scholium, but one more closely related to the content of metaphysics, would have to be the resolution of the questions pursued in the *Critique* from page 642 to 668. For there certain principles of reason are presented that determine *a priori* the order of nature, or rather the understanding, which is to seek nature's laws through experience. They seem to be constitutive and legislative with respect to experience, even though they spring from mere reason, which may not be regarded, as the understanding may, as a principle of possible experience.[18] Does this agreement rest on the following? Just as nature does not attach to appearances, or to their source, sensibility, in themselves, but is found only in the relation of sensibility to the understanding, so thoroughgoing unity in the understanding's use, for the sake of a whole of possible experience (in a system), can belong to the understanding only in relation to reason; and so experience too stands indirectly under the legislation of reason. This may be considered further by those who wish to trace the nature of reason even beyond its use in metaphysics,

17 A scholium is an explanatory remark appended to a text or proof, not part of the main argument.

18 The Appendix to the Transcendental Dialectic, on the regulative use of the ideas.

in the universal principles for making a natural history in general systematic. For in the work itself I presented this problem as important, but did not attempt its solution[19].

365 And so I end the analytic solution of the main question I myself posed—how is metaphysics in general possible?—having ascended from that in which its use is actually given, at least in its consequences, to the grounds of its possibility.

19 KANT'S NOTE. It has been my constant intention throughout the *Critique* to neglect nothing that could bring the investigation of the nature of pure reason to completeness, however deeply hidden it might lie. Afterward it is up to each person how far he wishes to pursue his inquiry, once he has only been shown which inquiries might still remain to be made. For this can fairly be expected of someone who has made it his business to survey this whole field, in order then to leave it to others for future cultivation and to allot as they please. The two scholia belong here too; their dryness will hardly recommend them to amateurs, and so they have been set out only for connoisseurs.

How is metaphysics possible as a science?

Kant's answer: only through a critique of reason.

Metaphysics, as a natural disposition of reason, is actual; but taken by itself alone (as the analytic solution of the third main question proved) it is also dialectical and deceptive. To want to take principles from it, and in using them to follow an illusion that is natural but none the less false, can never produce science—only a vain dialectical art, in which one school may outdo another, but none can ever win legitimate and lasting assent.

So that metaphysics, as science, may lay claim not merely to deceptive persuasion but to insight and conviction, a critique of reason itself must set out, all in a complete system: the entire stock of *a priori* concepts; their division according to their different sources—sensibility, understanding and reason; further, a complete table of them, and the analysis of all these concepts with everything that can be inferred from them; but then above all the possibility of synthetic cognition *a priori* by means of the deduction of these concepts; the principles of their use; and finally also the boundaries of that use. Critique, therefore, and critique alone, contains the whole well-tested and proven plan—indeed even all the means of carrying it out—by which metaphysics can be established as science; by other ways and means it is impossible. So the question here is not so much how this undertaking is possible, but only how it is to be set going, how good minds are to be moved from their previous perverse and fruitless labors to a treatment that will not deceive, and how such a union can best be directed toward the common end.

366 This much is certain: whoever has once tasted critique will be forever disgusted by all the dogmatic prattle he formerly put up with out of necessity, because his reason needed something and could find nothing better to occupy it. Critique stands to ordinary school metaphysics exactly as *chemistry* does to *alchemy*, or *astronomy* to fortune-telling *astrology*. I guarantee that no one who has thought through and grasped the principles of critique, even only in these Prolegomena, will ever return to that old, sophistical pseudo-science. Rather, he will look forward with a certain delight to a metaphysics that is now indeed within his power, needs no more preparatory discoveries, and can for the first time afford reason lasting satisfaction. For this is an advantage on which, among all possible sciences, metaphysics alone can count with confidence: that it can be brought to completion and to a permanent state, since it may not change any further and is incapable of any increase through new discoveries. This is because reason here has the sources of its cognition not in objects and their intuition (through which it cannot be taught anything more), but in itself. And once it has presented the fundamental laws of its faculty completely and so determinately as to guard against all misinterpretation, nothing remains that pure reason could cognize *a priori*, or even so much as ask with good grounds. The sure prospect of knowledge so determinate and self-contained has a special charm of its own, even if one sets aside all its usefulness (of which I shall speak later).

All false art, all vain wisdom lasts its time; for in the end it destroys itself, and its highest cultivation is at the same time the moment of its downfall. That this time has now come for metaphysics is proved by the state into which it has fallen among all learned nations, despite all the zeal with which sciences of every other kind are pursued. The old arrangement of university studies still preserves its shadow; a single academy of sciences still, now and then, prompts one attempt or another in it by offering prizes. But it is no longer counted among the rigorous sciences, and one may judge for oneself how a man of intel-

lect, if someone wanted to call him a great metaphysician, would take this compliment—well meant, but envied by hardly anyone.[1]

[367] But although the time of decline for all dogmatic metaphysics has undoubtedly arrived, a good deal is still missing before we can say that the time of its rebirth, by way of a thorough and complete critique of reason, has already appeared. Every transition from one inclination to its opposite passes through a state of indifference. This moment is the most dangerous for an author, but, it seems to me, the most favorable for the science. For when partisan spirit has died out through the complete dissolution of former alliances, minds are in the best condition to listen, little by little, to proposals for an alliance on a different plan.

When I say that I hope these Prolegomena will perhaps stir up inquiry in the field of critique, and offer the general spirit of philosophy—which seems to lack nourishment in its speculative part—a new and very promising object to occupy it, I can already imagine in advance that everyone whom the thorny paths along which I led them in the *Critique* have made weary and resentful will ask me what I base this hope on. I answer: *on the irresistible law of necessity*.

That the human mind will one day give up metaphysical inquiries altogether is just as little to be expected as that we would one day prefer to stop breathing entirely so as not always to be taking in impure air. There will therefore always be metaphysics in the world—and, what is more, in everyone, above all in every reflective person—and, for lack of a public standard, each will cut it to suit himself. Now, what has until now been called metaphysics cannot satisfy any critical mind; yet to renounce it entirely is also impossible. So a critique of pure reason itself must finally be *attempted*, or, if one exists, *examined* and subjected to general scrutiny. For there is no other means of

1 Presumably the Royal Prussian Academy of Sciences in Berlin, which set prize questions on metaphysical topics.

relieving this pressing need, which is something more than mere curiosity.

Ever since I have come to know critique, whenever I have finished reading a work of metaphysical content that both entertained and cultivated me through the precision of its concepts, through variety and order, and through an easy style, I have not been able to keep from [368] asking: *has this author really advanced metaphysics by a single step*? I beg the pardon of the learned men whose writings have been useful to me in other respects and have always contributed to the cultivation of the powers of the mind. For I confess that neither in their attempts nor in my own lesser ones (for which self-love nonetheless speaks up) have I been able to find that the science was advanced in the least by them. And this is for the entirely natural reason that the science did not yet exist, and cannot be assembled piecemeal either; rather, its germ must first be fully preformed in the critique. To prevent all misinterpretation, however, one must remember from what was said earlier that the analytic treatment of our concepts is certainly of great use to the understanding, but that the science (of metaphysics) is not advanced by it in the least. For those analyses of concepts are only materials out of which science is first to be built. So one may analyze and define the concept of substance and accident as beautifully as one likes; that is very good as preparation for some future use. But if I cannot prove at all that in everything that exists the substance is permanent and only the accidents change, then all that analysis has not advanced the science in the least. Now, metaphysics has so far been unable to prove as valid *a priori* either this proposition or the principle of sufficient reason, much less any more complex proposition, such as one belonging to the doctrine of the soul or to cosmology—and indeed no synthetic proposition whatever. So all that analysis has accomplished nothing, created and furthered nothing, and after so much bustle and noise the science still stands where it stood in *Aristotle's* time—although the preparations for it, had the guiding thread to synthetic cog-

nitions only first been found, have unquestionably been made much better than before.

If anyone feels offended by this, he can easily refute the charge, if only he will cite a single synthetic proposition belonging to metaphysics that he offers to prove *a priori* in the dogmatic manner. For only if he achieves this will I grant that he has really advanced the science—even if the proposition is otherwise sufficiently confirmed by common experience. No demand can be more moderate and fair, and, in the (inevitably certain) event that it is not met, no verdict [369] can be more just than this: that metaphysics as science has never yet existed at all.

In case the challenge is accepted, I must ask that two things be ruled out. First, the game of *probability* and conjecture, which suits metaphysics as badly as it suits geometry. Second, deciding matters by means of the divining rod of so-called *sound common sense*, which does not twitch for everyone but goes by personal qualities.

For *as regards the first*, nothing more absurd can be found than to want to base one's judgments on probability and conjecture in a metaphysics, a philosophy from pure reason. Everything that is to be cognized *a priori* is thereby given out as apodictically certain, and must therefore also be proved as such. One might just as well want to base a geometry or an arithmetic on conjectures. For as for the *calculus probabilium* [calculus of probabilities] of the latter, it contains not probable but entirely certain judgments about the degree of possibility of certain cases under given uniform conditions. In the sum of all possible cases these must without fail turn out according to the rule, even though the rule is not sufficiently determinate with respect to each individual chance event. Only in empirical natural science can conjectures (by means of induction and analogy) be tolerated—and even then only on condition that at least the possibility of what I assume is completely certain.

Matters stand, if possible, even worse with the *appeal to sound common sense*, when what is at issue are concepts and principles

not insofar as they are to be valid with respect to experience, but insofar as they claim to hold even outside the conditions of experience. For what is *sound understanding*? It is *common understanding* insofar as it judges correctly. And what, then, is common understanding? It is the faculty of cognizing and using rules *in concreto* [in the concrete], as distinct from *speculative understanding*, which is a faculty of cognizing rules *in abstracto* [in the abstract]. Thus common understanding will hardly understand the rule that everything that happens is determined by its cause, and will never be able to grasp it in its generality. It therefore asks for an example from experience; and when it hears that the rule means nothing other than what it has always thought when a windowpane [370] was broken or a household item had gone missing, it understands the principle and grants it too. Common understanding therefore has no use beyond the extent to which it can see its rules (although these really do reside in it *a priori*) confirmed in experience. To grasp them *a priori* and independently of experience belongs to speculative understanding and lies wholly outside the horizon of common understanding. But metaphysics has to do solely with the latter kind of cognition. And it is certainly a poor sign of sound understanding to appeal to that witness, who has no judgment at all here, and whom one otherwise tends to look down on—except when one finds oneself in a tight spot and, in one's speculation, is at a loss what to do.

It is a common evasion of these false friends of common human understanding (who praise it highly on occasion but usually despise it) to say: surely there must in the end be some propositions that are immediately certain, of which one need give not only no proof but no account at all, since otherwise one would never come to the end of the grounds of one's judgments. But to prove this entitlement they can never cite anything else indubitable that they may ascribe directly to common human understanding (apart from the principle of contradiction, which, however, is not sufficient to establish the truth of synthetic judgments) except mathematical propositions: for

example, that two times two makes four, that between two points there is only one straight line, and so on. But these are judgments worlds apart from those of metaphysics. For in mathematics I can make (construct) through my thinking itself everything that I represent to myself as possible through a concept. I add one two to the other two, step by step, and make the number four myself; or in thought I draw all sorts of lines from one point to another, and can draw only one that is similar to itself in all its parts (equal as well as unequal). But with all my power of thought I cannot extract from the concept of one thing the concept of something else whose existence is necessarily connected with the first; I must consult experience. And although my understanding supplies me *a priori* (though always only in relation to possible experience) with the concept of such a connection (causality), I still cannot, [371] as with the concepts of mathematics, present it *a priori* in intuition and so lay out its possibility *a priori*. Instead, if this concept, together with the principles of its application, is to be valid *a priori*—as is indeed required in metaphysics—it always needs a justification and deduction of its possibility. For otherwise one does not know how far it is valid, and whether it can be used only in experience or outside it as well. So in metaphysics, as a speculative science of pure reason, one can never appeal to common human understanding. One may do so, though, when one is compelled to abandon it and to renounce all pure speculative cognition, which must always be knowledge—and hence also metaphysics itself and its teaching (on certain matters)—and when a rational faith is found to be the only thing possible for us, and also sufficient for our need (perhaps even more salutary than knowledge itself). For then the shape of the matter is entirely changed. Metaphysics must be science, not only as a whole but in all its parts; otherwise it is nothing at all. For as speculation of pure reason it has no footing anywhere except in universal insights. Outside it, however, probability and sound common sense may very well have their useful and legitimate employment—but

according to principles entirely their own, whose weight always depends on their relation to the practical.

This is what I consider myself entitled to demand for the possibility of a metaphysics as science.

Appendix

Kant answers a hostile review and asks readers to judge the Critique fairly.

Since all the paths taken so far have failed to reach this goal, and since without a preceding critique of pure reason it will probably never be reached, it does not seem unfair to ask that the attempt now laid before the public be subjected to a precise and careful examination—unless one thinks it still more advisable to give up all claims to metaphysics entirely. In that case, provided one remains true [372] to one's resolve, there is nothing to object. If we take the course of things as it actually goes, not as it ought to go, there are two kinds of judgment. There is a *judgment that precedes the investigation*: in our case, this is the one in which the reader, on the basis of his metaphysics, passes judgment on the critique of pure reason (which is supposed to investigate the very possibility of that metaphysics). And then there is another *judgment, which follows the investigation*: here the reader is able for a while to set aside the consequences of the critical investigations, which may well clash rather sharply with the metaphysics he had otherwise accepted, and first examines the grounds from which those consequences may have been derived. If what ordinary metaphysics sets forth were established as certain (as geometry is, say), the first way of judging would be valid. For if the consequences of certain principles contradict established truths, then those principles are false and must be rejected without any further investigation. But suppose it is not the case that metaphysics has a stock of indisputably certain (synthetic) propositions. Suppose, perhaps, that it has a great many which,

though just as plausible as the best among them, nonetheless conflict with one another in their consequences, and that nowhere in it is there to be found any reliable criterion at all of the truth of properly metaphysical (synthetic) propositions. Then the preceding way of judging cannot take place; instead, the investigation of the principles of the critique must come before any judgment about its worth or worthlessness.

SAMPLE OF A JUDGMENT ON THE CRITIQUE THAT PRECEDES INVESTIGATION

Kant answers the Göttingen review, rejecting its charge that his work is a system of higher idealism.

A judgment of that kind is to be found in the *Göttingische gelehrte Anzeigen*, supplement to the third issue, of January 19, 1782, pages 40 ff.[1]

Suppose an author who knows the subject of his work well, and who has been careful throughout to put his own reflection into treating it, falls into the hands of a reviewer who is, for his part, sharp-sighted enough to spy out the points on which the worth or worthlessness of the work really rests; who does not cling to words but pursues the substance; and who does more than merely sift and test the principles from which the author set out. Then the severity of the judgment may displease the author, but the public is indifferent, [373] for it gains by it. And the author himself can be glad of the opportunity to correct or clarify his essays, examined early on by an expert, and in this way, if he believes he is fundamentally right, to clear away in good time the stumbling block that might later harm his work.

With my reviewer I find myself in an entirely different situation. He seems not to see at all what really mattered in the investigation with which I was occupied (successfully or unsuccessfully). Whether it is impatience at thinking through a

1 The anonymous review of the *Critique of Pure Reason* in the Göttingen scholarly journal. Christian Garve wrote it; J. G. H. Feder heavily cut and altered it before publication.

lengthy work, or ill humor at a threatened reform of a science in which he believed he had long since settled everything, or—what I am reluctant to suppose—a genuinely limited conception, by which he is never able to think beyond his school metaphysics, is to blame; in short, he rushes impetuously through a long series of propositions of which, without knowing their premises, one can make nothing at all. Here and there he scatters his censure, the grounds for which the reader sees as little as he understands the propositions it is supposed to be aimed at. He can therefore neither serve the public as information nor do me the slightest harm in the judgment of experts. For that reason I would have passed over this review entirely, had it not given me occasion for some clarifications that might, in a few cases, protect the reader of these Prolegomena from misinterpretation.

The reviewer, however, in order to take up a point of view from which he could most easily present the whole work in a light unfavorable to the author, without having to trouble himself with any particular investigation, begins and ends by saying: "This work is a system of transcendental (or, as he translates it, higher)[2] idealism."

374 On seeing this line I soon saw what sort of review would come of it. It was roughly as if someone who had never heard or seen anything of geometry found a Euclid, was asked to pass judgment on it, and, having come upon many figures while leaf-

2 KANT'S NOTE. By no means the *higher*. High towers, and the metaphysically great men who resemble them—around both of which there is usually a lot of wind—are not for me. My place is the fertile *bathos* of experience. And the word "transcendental," whose meaning I indicated so many times and which the reviewer has not even grasped (so hastily has he looked at everything), does not mean something that goes beyond all experience. It means something that does precede experience (*a priori*), but that is destined for nothing more than simply to make cognition from experience possible. When these concepts overstep experience, their use is called transcendent, which is distinguished from their immanent use, that is, the use restricted to experience. All misinterpretations of this kind have been sufficiently guarded against in the work; but the reviewer found it to his advantage to misinterpret.

TRANSLATOR'S NOTE. Bathos: Greek for "depth," the lowlands, as opposed to the heights of the "higher."

ing through it, said something like: "The book is a systematic guide to drawing. The author uses a peculiar language in order to give obscure, unintelligible instructions, which in the end can accomplish nothing more than what anyone can achieve with a good natural eye, etc."

Let us nonetheless see what kind of idealism it is that runs through my whole work, although it is far from constituting the soul of the system.

The thesis of all genuine idealists, from the Eleatic school to Bishop Berkeley, is contained in this formula: "All cognition through the senses and experience is nothing but sheer illusion, and only in the ideas of pure understanding and reason is there truth."[3]

The principle that governs and determines my idealism throughout is, by contrast: "All cognition of things from mere pure understanding or pure reason is nothing but sheer illusion, and only in experience is there truth."

But that is precisely the opposite of that idealism proper. How, then, did I come to use this expression for an entirely opposite purpose—and how did the reviewer come to see it everywhere?

The solution to this difficulty rests on something that could very easily have been seen from the context of the work, had one wanted to. Space and time, together with everything they contain, are not things or their properties in themselves, but belong merely to the appearances of things. Up to this point I am of one confession with those idealists. But they, and among them above all Berkeley, regarded space as a merely empirical representation, which, just like the appearances in it, would become known to us, together with all its determinations, only by means of experience or perception. [375] I, by contrast, show first that space (and likewise time, which Berkeley did not attend to), together with all its determinations, can be cognized by us *a priori*. For space, as well as time, resides in us before all

3 The Eleatics, followers of Parmenides of Elea (5th century BC), held that the changing world of the senses is illusory.

perception or experience as a pure form of our sensibility, and makes possible all intuition of sensibility, and hence all appearances. From this it follows that, since truth rests on universal and necessary laws as its criteria, experience in *Berkeley* can have no criteria of truth, because nothing *a priori* was laid (by him) at the basis of its appearances. From which it then followed that experience is nothing but sheer illusion. For us, by contrast, space and time (in combination with the pure concepts of the understanding) prescribe *a priori* their law to all possible experience, and this law at the same time provides the sure criterion for distinguishing truth from illusion within it.[4]

My so-called (properly, critical) idealism is therefore of an entirely peculiar kind: it overturns ordinary idealism, and through it all *a priori* cognition, even that of geometry, first receives objective reality—which, without this ideality of space and time that I have proved, could not be asserted at all even by the most zealous realists. Things being so, I wish, to prevent all misunderstanding, that I could name this concept of mine differently; but to change it entirely is not really feasible. So let me be permitted in future, as already mentioned above, to call it formal, or better still critical, idealism, to distinguish it from the dogmatic idealism of *Berkeley* and the skeptical idealism of *Descartes*.[5]

Beyond this I find nothing noteworthy in the review of this book. Its author judges throughout *en gros* [wholesale]—a 376 manner cleverly chosen, since it does not betray one's own knowledge or ignorance. A single detailed judgment *en détail* [in

4 KANT'S NOTE. Idealism proper always has a visionary purpose, and can have no other. Mine, however, serves solely to comprehend the possibility of our *a priori* cognition of objects of experience—a problem that has not been solved until now, indeed has not even been raised. With this, the whole of visionary idealism falls. It always inferred (as can already be seen from Plato) from our *a priori* cognitions (even those of geometry) to another intuition than that of the senses (namely, an intellectual one), because it never occurred to anyone that the senses too might intuit *a priori*.

TRANSLATOR'S NOTE. Plato (c. 428–348 BC) held that true knowledge, as in geometry, is of the Forms grasped by the intellect, not by the senses.

5 *Cartesius*: the Latin form of Descartes's name.

detail] would, had it concerned the main question as was only fair, perhaps have exposed my error—or perhaps the extent of the reviewer's insight into investigations of this kind. It was also no badly conceived trick, meant to take away early the desire to read the book itself from readers who are used to forming an idea of books only from newspaper notices, to reel off in one breath a mass of propositions which, torn from their connection with their arguments and clarifications (especially since they are so antipodal to all school metaphysics), must necessarily sound absurd; to assail the reader's patience to the point of disgust; and then, after acquainting me with the ingenious proposition that constant illusion is truth, to close with the blunt yet fatherly lesson: why this quarrel with commonly accepted language, why and whence this idealist distinction? A judgment which, having first made out everything distinctive about my book to be metaphysically heretical, in the end reduces it to a mere innovation in terminology—and clearly proves that my self-appointed judge has not understood the least thing about it, and on top of that has not properly understood himself.[6]

Meanwhile the reviewer speaks like a man who must be conscious of important and superior insights that he is still keeping hidden. For nothing has recently come to my notice in metaphysics that could justify such a tone. But he does very wrong to withhold his discoveries from the world. For there are no doubt many others who, like me, for all the fine things that have been

6 KANT'S NOTE. The reviewer is mostly fighting his own shadow. When I set the truth of experience against dreaming, it does not occur to him at all that what is meant here is only the well-known *somnio objective sumto* [dream taken objectively] of the Wolffian philosophy, which is merely formal, and in which the difference between sleeping and waking is not considered at all, nor can it be considered in a transcendental philosophy. Moreover, he calls my deduction of the categories and the table of principles of the understanding "commonly known principles of logic and ontology, expressed in an idealist manner." The reader need only consult these Prolegomena on the point to be convinced that no more wretched judgment—and none more historically incorrect—could possibly be passed.

TRANSLATOR'S NOTE. Christian Wolff (1679–1754), the leading German school philosopher of the age, defined a dream "taken objectively" as a sequence of representations lacking the connection given by the principle of sufficient reason.

written in this field for a long time, could not find [377] that the science had been advanced by so much as a finger's breadth. Sharpening definitions, furnishing lame proofs with new crutches, giving the patchwork quilt of metaphysics new patches or a different cut—that one still finds, to be sure; but that is not what the world is asking for.[7] The world is tired of metaphysical assertions. What it wants is the possibility of this science, the sources from which certainty in it could be derived, and reliable criteria for distinguishing the dialectical illusion of pure reason from truth. The reviewer must have the key to this; otherwise he would never have spoken in so lofty a tone.

But I come to suspect that such a need of the science may never have entered his mind. For otherwise he would have directed his review to this point, and even a failed attempt in so important a matter would have earned his respect. If that is so, we are good friends again. He may think himself as deeply into his metaphysics as he sees fit; no one shall stop him. Only about what lies outside metaphysics—its source, which lies in reason—he cannot judge. That my suspicion is not without grounds I prove by this: he did not mention by a single word the possibility of synthetic cognition *a priori*, which was the real problem, on whose solution the fate of metaphysics wholly depends, and at which my *Critique* (just like my Prolegomena here) was entirely aimed. The idealism he came up against, and on which he got stuck, had been taken into the doctrine only as the sole means of solving that problem (although it also received its confirmation on other grounds). And so he ought to have shown either that the problem does not have the importance I attribute to it (as I do now in the Prolegomena too), or that it cannot be solved at all by my concept of appearances, or that it can be solved better in some other way. But of this I find not a word in the review. The reviewer therefore understood nothing of my work, and perhaps nothing of the spirit and essence of metaphysics itself either—unless, as I would rather assume, reviewer's haste, irritated by the difficulty of working through

7 A cento is a patchwork poem stitched together from lines of other poems.

so many obstacles, cast an unfavorable shadow over the work lying before him and made it unrecognizable to him in its main features.

[378] A learned journal, however well and carefully its contributors are chosen, is still very far from being able to maintain in the field of metaphysics the reputation it otherwise deserves elsewhere. Other sciences and branches of knowledge do have their standard. Mathematics has its standard in itself; history and theology in secular or sacred books; natural science and medicine in mathematics and experience; jurisprudence in law codes; and even matters of taste in the models of the ancients. But for judging the thing called metaphysics, the standard has yet to be found (I have made an attempt to determine both it and its use). What, then, is to be done until it is worked out, when writings of this kind must nonetheless be judged? If they are of the dogmatic kind, one may handle it as one likes: no one will play the master over another here for long before someone turns up who pays him back in kind. But if they are of the critical kind—and critical not with respect to other writings but with respect to reason itself, so that the standard of judgment cannot already be assumed but is only now being sought—then objection and censure may be welcome, but a spirit of accommodation must still underlie them. For the need is common to all, and the lack of the requisite insight makes it improper to assume a judicial, decisive authority.

But in order to tie this defense of mine at the same time to the interest of the philosophizing community, I propose a test that is decisive for the way in which all metaphysical investigations must be directed toward their common end. It is nothing other than what mathematicians have sometimes done to settle the superiority of their methods in a contest: namely, a challenge to my reviewer to prove in his own way, but, as is fitting, from grounds *a priori*, any single one of the truly metaphysical propositions he asserts—that is, one that is synthetic and cognized *a priori* from concepts—perhaps even one of the most indispensable, such as the principle of the permanence of substance, or of

the necessary determination of events in the world by their cause. If he cannot do this (and silence is confession), he must grant that, since metaphysics without the apodictic certainty of propositions of this kind is nothing whatever, its possibility or impossibility must before all [379] else first be settled in a critique of pure reason. He is thus obliged either to admit that my principles of critique are correct or to prove their invalidity. But I already foresee that, however confidently he has so far relied on the certainty of his principles, when it comes to a rigorous test he will not find a single one in the whole extent of metaphysics with which he could boldly come forward. So I will grant him the most advantageous condition one can expect in a contest: namely, to relieve him of the *onus probandi* [burden of proof] and let it be laid on me.

He finds, namely, in these Prolegomena and in my *Critique*, pp. 426–461, eight propositions, which conflict with each other two by two, but each of which necessarily belongs to metaphysics, which must either accept or refute it (although there is not a single one of them that has not been accepted in its time by some philosopher). Now he is free to pick whichever one of these eight propositions he likes and to accept it without proof, which I grant him—but only one (for wasting time will serve him no better than me)—and then to attack my proof of the opposite.[8] If I can nonetheless rescue this proof, and in this way show that, according to principles that every dogmatic metaphysics must necessarily acknowledge, the opposite of the proposition he has adopted can be proved just as clearly, then it is thereby settled that there lies in metaphysics a hereditary defect, which cannot be explained, much less removed, unless one ascends to its birthplace, pure reason itself. And so my *Critique* must either be accepted or a better one put in its place; at the least, then, it must be studied—which is the only thing I now ask. If, on the other hand, I cannot rescue my proof, then a synthetic proposition *a priori* from dogmatic principles stands firm

8 The four antinomies of pure reason, in the first edition (A) pagination of the *Critique of Pure Reason*.

on my opponent's side; my accusation against ordinary metaphysics was therefore unjust, and I offer to acknowledge his censure of my *Critique* as legitimate (although this would still be far from following). For this, however, it would be necessary, it seems to me, *to step out of his incognito*. For I do not see how it could otherwise be prevented that, instead of one challenge, I might be honored or assailed with several from anonymous [380] and yet uncalled-for opponents.

PROPOSAL FOR AN INVESTIGATION OF THE CRITIQUE, ON WHICH JUDGMENT CAN FOLLOW

Kant asks readers to test the Critique piece by piece, using the Prolegomena as their guide.

I am also indebted to the learned public for the silence with which it has for a considerable time honored my *Critique*. For this does show a suspension of judgment, and so a certain presumption that in a work which abandons all the accustomed paths and strikes out on a new one, in which one cannot immediately find one's way, there may perhaps be something through which an important but now withered branch of human knowledge could receive new life and fruitfulness. It shows, then, a caution not to break off and destroy the still tender graft through any hasty judgment. A sample of a judgment delayed for such reasons has just now come before my eyes in the *Gothaische gelehrte Zeitung*. Its thoroughness (leaving aside my praise, which is suspect here) every reader will perceive for himself from the clear and undistorted presentation of a part of my work that belongs to its first principles.[9]

And now I propose—since an extensive edifice cannot possibly be judged as a whole at once by a hasty survey—to examine it piece by piece from its foundation up, using the present Prolegomena as a general outline with which the work itself could then be compared as occasion arises. This request would be immodest, and would deserve to be rejected with indignation, if

9 A favorable review of the *Critique* in the Gotha scholarly newspaper, 1782.

it rested on nothing more than my imagined sense of its importance, which vanity usually lends to all its own products. But the affairs of the whole of speculative philosophy now stand on the point of being completely extinguished, although human reason clings to them with a never-extinguished inclination. Only because it is ceaselessly deceived is this inclination now trying, though in vain, to turn itself into indifference.

In our thinking age it is not to be supposed that many deserving men would fail to use every good occasion to work together for the common interest of an ever more enlightened reason, if only some hope appears of thereby reaching the goal. [381] Mathematics, natural science, law, the arts, even morality, etc., do not yet completely fill the soul. There always remains a space in it that is marked out for mere pure and speculative reason. Its emptiness compels us to seek in grotesqueries, trifles, or even fanaticism what looks like occupation and entertainment but is at bottom only distraction—in order to drown out the troublesome call of reason, which, in keeping with its vocation, demands something that would satisfy it for its own sake, and not merely set it busily to work in the service of other purposes or for the interest of the inclinations. Hence a consideration concerned solely with this domain of reason subsisting by itself has a great attraction for anyone who has only tried to extend his concepts in this way—and, I may well say, a greater one than any other theoretical knowledge, which one would not readily exchange for it. For it is precisely in this domain, as I have good reason to suppose, that all other knowledge, and even all ends, must meet and unite into a whole.

I propose these Prolegomena, however, as the plan and guiding thread of the investigation, and not the work itself, for this reason. With the work I am still entirely satisfied even now as regards its content, its order and method, and the care that was applied to each proposition in order to weigh and test it exactly before I set it down (for it took years to satisfy myself fully, not only about the whole but sometimes even about a single proposition with respect to its sources). But I am not entirely satisfied

with my presentation in some sections of the Doctrine of Elements, for example the deduction of the concepts of the understanding or the section on the paralogisms of pure reason, because a certain prolixity in them hinders clarity. In their place one can take as the basis of examination what the Prolegomena say here regarding these sections.

The Germans are praised for being able to get further than other peoples in whatever requires perseverance and sustained diligence. If this opinion is well founded, an opportunity now presents itself to bring to completion an undertaking whose successful outcome is hardly to be doubted, in which all thinking people take an equal share, and which has nonetheless not succeeded until now—and so to confirm that favorable opinion. This is especially so because the science concerned is of so peculiar a kind that it can be brought all at once to its [382] full completeness and into that *permanent state* in which it cannot be advanced in the least further, nor enlarged or even altered by later discovery (I do not count here the embellishment that comes from greater clarity here and there, or from added usefulness for all sorts of purposes). This is an advantage that no other science has or can have, because none concerns a faculty of cognition so completely isolated, independent of others, and unmixed with them. The present moment also seems not unfavorable to this request of mine, since in Germany at present people hardly know what else they could occupy themselves with, apart from the so-called useful sciences, that would be not mere play but at the same time serious business, through which a lasting end is achieved.

How the efforts of scholars could be united toward such an end—devising the means for that I must leave to others. It is not my intention, however, to ask anyone simply to follow my propositions, or even to flatter myself with the hope that they will. Rather, attacks, repetitions, restrictions, or else confirmation, completion, and extension may occur, as it happens. If only the matter is investigated from the ground up, it cannot now fail that a system of doctrine—even if not mine—will come into

being by this means, one that can become a legacy to posterity for which it will have reason to be grateful.

What kind of metaphysics could be expected as a result, once one is first in order with the principles of the critique—and how this metaphysics need by no means appear impoverished and reduced to a paltry figure by having its borrowed feathers plucked, but can appear richly and respectably furnished in another respect—would take too long to show here. But other great benefits that such a reform would bring with it are immediately obvious. Ordinary metaphysics already did some good by seeking out the elementary concepts of pure understanding, in order to make them distinct through analysis and determinate through definitions. In this way it became a training for reason, wherever reason might later see fit to turn. But that was also all the good it did. For it nullified this merit of its own again by encouraging self-conceit through daring assertions, sophistry through subtle [383] evasions and whitewashing, and shallowness through the ease of getting past the hardest problems with a little school wisdom. This shallowness is all the more seductive the more it has the choice of borrowing, on the one hand, something of the language of science and, on the other, something of popularity—and thereby is all things to all people, but in fact nothing at all. Through critique, by contrast, our judgment is given the standard by which knowledge can be distinguished with certainty from pseudo-knowledge. And critique, by being put fully into practice in metaphysics, establishes a way of thinking that afterward extends its beneficial influence to every other use of reason and for the first time instills the true philosophical spirit. But the service it renders to theology, too—by making theology independent of the judgment of dogmatic speculation, and thereby putting it completely beyond the reach of all attacks from such opponents—is certainly not to be underestimated. For ordinary metaphysics, although it promised theology great support, could not afterward keep this promise; and, moreover, by calling in speculative dogmatics to its aid, it did nothing but arm enemies against itself. Fanaticism, which

cannot arise in an enlightened age except by hiding behind a school metaphysics, under whose protection it may venture to rave, as it were, with reason, is driven by critical philosophy out of this, its last hiding place. And above all it cannot but be important to a teacher of metaphysics to be able to say, for once, with universal assent, that what he teaches is now at last *science* too, and that real benefit is thereby rendered to the community.