



Prolegomena to Any Future Metaphysics

IMMANUEL KANT

Plain English Translation

MOUSEIA



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Translated by Michael Berardi

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THIS EDITION

Mouseia's complete Plain English edition, made independently and directly from the same complete German text. Retranslated from the German in October 2026, after a review found the first draft tracked the Musean edition too closely.

TRANSLATOR

Michael Berardi

THE WORK

Written 1783 · Philosophy

SOURCE

Original text from archive.org.

GAPS AND UNCERTAINTIES

The translation is machine-assisted and source-reviewed, not the work of a named human translator. AA309's comparative größer, AA334's two calls to one note and AA354's §ph are kept as the witness prints them rather than conjecturally emended; AA372–373's nicht bloß construction is kept as the page reads; AA259 prints “trotzig thut Ich sollte” with no full stop after “thut” (checked against the scan image), and the Original keeps it so.

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Edition dated 26 October 2026

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Title



Prolegomena
to
Any Future Metaphysics,
That
as a Science
Will Be Able to Appear,
by
Immanuel Kant.

Preface



These Prolegomena are not meant for beginners. They are meant for future teachers, and even for them they are not a help in arranging the presentation of a science that already exists. They are meant to *discover* that science in the first place.

Some scholars see the history of philosophy, old and new, as itself their whole philosophy. These Prolegomena are not written for them. They must wait until the people who are trying to draw from the sources of reason itself have finished their work. Then it will be the historians' turn to report to the world what has been done. Otherwise nothing can be said that, in their view, has not been said before. And in fact that holds as a sure prediction for everything in the future. Human understanding has wandered over countless subjects in countless ways for many centuries. So it is hard to avoid finding something old that resembles whatever is new.

My aim is to convince everyone who thinks metaphysics worth pursuing that they must stop their work for the time being. They must treat everything done so far as undone. Above all, they must first ask whether anything like metaphysics is possible at all.

If metaphysics is a science, why can it not win lasting and general agreement, as other sciences do? If it is not a science, how does it keep boasting under the appearance of one, and keep human understanding hoping for things that never fade and are never fulfilled? Whether we try to prove that we

know something here or that we know nothing, we must settle something certain about the nature of this supposed science. It cannot possibly go on as it is. It seems almost laughable that every other science moves steadily forward, while this one, which claims to be wisdom itself and which everyone consults as an oracle, keeps turning in the same spot without taking a step further. Its followers have also dwindled. People who feel strong enough to shine in other sciences do not want to risk their reputation in this one. Here anyone who is ignorant in everything else claims the right to give a final verdict, because in this country there is still no reliable weight and measure for telling thorough work from shallow chatter.

Yet it is nothing unheard of that after long work on a science, when people marvel at how far they have come, someone finally wonders whether such a science is possible at all, and how. Human reason loves to build so much that it has often raised its tower and then taken it down again to see what the foundation was like. It is never too late to turn sensible and wise. But when insight comes late, it is always harder to get it moving.

To ask whether a science is possible assumes a doubt about whether it really exists. Such a doubt offends everyone whose whole fortune may consist of this supposed jewel. So anyone who lets the doubt slip out had better expect resistance from every side. Some will look down on that person with contempt, proud of an old possession that they think rightful for being old, with their textbooks of metaphysics in hand. Others, who see nothing except what matches what they have seen somewhere before, will not understand them. And for some time everything will go on as if nothing had happened that gave reason to fear or hope for a change.

Even so, I dare to foretell that any reader of these Prolegomena who thinks independently will not only doubt their former science. They will in the end be fully convinced that there can be no such science unless the demands set out here are met, since its possibility rests on them. And since this has never been done, they will conclude that there is as yet no metaphysics at all. Still, the demand for metaphysics can never die out,^[257-1] because the interests of uni-

versal human reason are bound up with it too closely. So they will admit that a complete reform, or rather a new birth of metaphysics, on a plan entirely unknown until now, is certainly coming, however long people resist it.

Ever since the efforts of *Locke* and *Leibniz*, or rather ever since metaphysics began, as far as its history goes back, no event has occurred that could have mattered more for the fate of this science than the attack *David Hume* made on it. He brought no light into this kind of knowledge. But he struck a spark. A light could have been lit from it, if the spark had fallen on tinder ready to take it, and if its glow had been carefully kept up and made larger.

Hume started mainly from a single but important concept of metaphysics: the concept of the *connection of cause and effect* (and with it the concepts that follow from it, such as force and action). He called on reason, which claims to have given birth to this concept itself, to answer him: by what right does it think that something could be so made that, when it is put in place, something else must necessarily be put in place too? That is what a cause means. He proved beyond reply that it is entirely impossible for reason to think such a connection a priori and from concepts. For the connection contains necessity, and there is no way to see how, just because one thing exists, another must necessarily exist too, or how the concept of such a connection could be brought in a priori. From this he concluded that reason deceives itself completely with this concept. It wrongly takes it for its own child, when it is nothing but a bastard of the imagination. The imagination, made pregnant by experience, has brought certain representations under the law of association, and it passes off the subjective necessity that results, that is, habit, as an objective necessity based on insight. From this he further concluded that reason has no power at all to think such connections, even in a general way, since its concepts would then be mere inventions. All of its supposedly a priori knowledge would be nothing but ordinary experience stamped with a false mark. That amounts to saying that there is no metaphysics at all and there can be none.^[258-1]

Hume's conclusion was hasty and wrong. But it was at least based on an investigation, and that investigation deserved to have the best minds of his day join forces to solve the problem, as he posed it, more successfully if they could.

A complete reform of the science would soon have grown out of that.

But metaphysics has always had bad luck, and nobody understood him. It is painful to watch how completely his opponents *Reid*, *Oswald*, *Beattie*, and finally *Priestley* missed the point of his problem. They kept taking for granted the very thing he doubted. They kept proving, with heat and mostly with great lack of modesty, what he had never thought of doubting. So they misread his hint for improvement so thoroughly that everything stayed in its old state, as if nothing had occurred. The question was not whether the concept of cause is right, useful, and indispensable for all our knowledge of nature. Hume never doubted that. The question was whether reason thinks this concept a priori, and so whether it has an inner truth independent of all experience and therefore a use extending further, not limited to objects of experience. This is what Hume expected someone to explain. The issue was only the origin of the concept, not whether we can do without it in use. Once its origin was worked out, the conditions of its use and the range in which it is valid would have followed of themselves.

To do justice to this problem, the famous man's opponents would have had to go very deep into the nature of reason, so far as it is concerned only with pure thinking. They did not want to. So they invented an easier way to put on airs without any insight: an appeal to *common sense*. It is a great gift of heaven to have a straight (or, as people now say, plain) common sense. But you have to prove it by your deeds, by what you think and say that is thoughtful and reasonable. You do not prove it by appealing to it like an oracle when you have nothing intelligent to offer in your defense. To appeal to common sense just when insight and knowledge run out, and not before, is one of the clever inventions of recent times. With it the emptiest chatterer can take on the most thorough thinker and hold his own. But as long as a small amount of insight remains, people will take care not to use this emergency measure. Looked at closely, this appeal is only an appeal to the verdict of the crowd. It is applause at which the philosopher blushes, while the popular wit gloats and swaggers. I should think, though, that Hume had as much right to sound sense as Beattie. On top of that he had something Beattie certainly lacked: a critical reason,

which keeps common sense within bounds so that it does not climb into speculations. Or, if the talk is only of these, it keeps common sense from wanting to decide anything, because it does not know how to justify its own principles. Only in this way will common sense remain sound. A chisel and a mallet are quite good for working a piece of timber, but for copper engraving you must use an etching needle. In the same way, sound common sense and speculative understanding are both useful, each in its own way. Common sense is useful when we need judgments that find their immediate application in experience. Speculative understanding is useful when we have to judge in general terms from mere concepts, as in metaphysics, where the common sense that calls itself sound, often by a name that means the opposite (*per antiphrasin*), has no judgment at all.

I freely admit it: the reminder from *David Hume* was exactly what first interrupted my dogmatic slumber many years ago and gave my investigations in speculative philosophy a completely different direction. I was far from accepting his conclusions. They came only from his not picturing his task as a whole, and hitting on just one part of it, which can give no answer without regard to the whole. When you start from a well-founded thought that someone else has left behind unfinished, you can hope to get further with continued reflection than the sharp mind to whom you owe the first spark of this light.

So I first tried to see whether Hume's objection could be stated in general terms. I soon saw that the concept of a connection between cause and effect is far from the only one by which the understanding thinks connections among things a priori. Metaphysics consists entirely of such concepts. I sought to establish how many there are. When that succeeded as I wished, that is, from a single principle, I went on to the deduction of these concepts. By then I was sure that they are not derived from experience, as Hume had feared, but arise from the pure understanding. This deduction seemed impossible to my sharp-minded predecessor. Nobody but he had even thought of it, although everyone used the concepts confidently without asking what their objective validity rests on. It was, I say, the hardest thing that could ever be undertaken for the sake of metaphysics. And worst of all, metaphysics, so far as any exists anywhere, could

not give me the slightest help in it, because that deduction has to settle first of all whether metaphysics is possible. I succeeded in solving Hume's problem not only in a particular case but for the whole faculty of pure reason. So I could take steps that were sure, though always slow, toward determining completely, and by general principles, the full range of pure reason, its boundaries as well as its content. That was exactly what metaphysics needs in order to build its system on a sure plan.

I fear, however, that the *working out* of Hume's problem in its widest extension (that is, the Critique of Pure Reason) may fare just as the *problem* itself did 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 put in that effort, because the work is dry, because it is obscure, because it goes against all customary concepts, and because it is also long. I admit that I find it unexpected to hear a philosopher complain about a lack of popular appeal, entertainment, and ease. The question is the very existence of a celebrated body of knowledge that humanity cannot do without. It can be settled only by the strictest rules of scholastic precision. Popularity may follow in time, but it must never come first. A certain obscurity does arise partly from the size of the plan, which makes it hard to survey the main points that the investigation turns on. That complaint is fair, and I will remedy it with these *Prolegomena*.

That work, which sets out the faculty of pure reason in its whole extent and boundaries, always remains the foundation. The Prolegomena refer to it as no more than warm-up exercises. For the Critique must stand there as a science, ordered and complete down to its smallest parts, before we can even think of letting metaphysics appear, or of cherishing a distant hope of it.

People have long been used to seeing old, worn-out knowledge freshened up. It is taken out of its former connections and fitted with a systematic garment cut to the new author's taste, but under new titles. Most readers will expect nothing else from that Critique. But these Prolegomena will bring them to see that it is an entirely new science. Nobody had even conceived the thought of it before, and even the bare idea was unknown. Of everything given

so far, nothing could be used for it except the hint that Hume's doubts could give. Even he had no inkling of any such possible formal science. To bring his ship to safety, he ran it aground on the shore of skepticism, where it may lie and rot. What I need to do is give the ship a pilot. This pilot must have sure principles of navigation drawn from knowledge of the globe, a complete sea chart, and a compass, so that he can steer the ship safely wherever he thinks fit.

To approach a new science that is entirely isolated and the only one of its kind with the prejudice that you can judge it by knowledge you have already acquired is pointless. That is just the knowledge whose reality must first be completely doubted. All it achieves is that you think you see everywhere what you already knew, because the expressions sound similar. Everything must then look badly distorted, absurd, and gibberish, because you take as your basis not the author's thoughts but only your own way of thinking, which long habit has turned into second nature. But the length of the work, so far as it comes from the science itself and not from the presentation, along with the unavoidable dryness and scholastic exactness, are qualities that may well be very good for the subject itself but are bound to be bad for the book.

Not everyone has the gift of writing as subtly yet as attractively as *David Hume*, or as thoroughly and elegantly as *Moses Mendelssohn*. Still, I flatter myself that I could have made my presentation popular if all I had wanted was to sketch a plan and recommend carrying it out to others. But I cared about the good of the science that has occupied me for so long. It took a lot of perseverance, and not a little self-denial, to prefer the prospect of applause that comes late but lasts over the lure of a quick and favorable reception.

Making plans is often a lavish, boastful pastime of the mind. By it people give themselves the look of creative genius. They demand what they cannot deliver themselves, criticize what they cannot do better, and propose things without knowing where to find them. Yet even the sound plan of a general critique of reason would have taken more than one might suppose, if it was not to become, as usual, a speech full of pious wishes. But pure reason is such a separate sphere, so thoroughly connected within itself, that you cannot touch one part without touching all the rest. You can accomplish nothing until you have

fixed the place of each part and its influence on the others. There is nothing outside pure reason that could correct our judgment inside it. So the validity and use of each part depends on its relation to the others within reason itself. In the same way, in the limbs of a living body, the purpose of each limb can be worked out only from the full concept of the whole. That is why a critique of this kind is never reliable unless it is *complete* and *finished* down to the smallest elements of pure reason. Of the sphere of this faculty, we must determine and settle either *everything* or *nothing*.

A mere plan that came before the *Critique* of pure reason could not be understood, could not be trusted, and useless. A plan that comes after it is all the more useful. It puts us in a position to survey the whole, to examine one by one the main points on which this science turns, and to arrange some things in the way it is presented better than the first version of the work.

Here, then, is such a *plan*, coming after the finished work. It may now be set out by the *analytic method*, while the work itself had to be written entirely in the *synthetic manner*. That way the science could show all its joints in their natural connection, as the build of an entirely special faculty of knowledge. Some readers may find this plan obscure too, though I send it ahead as Prolegomena to all future metaphysics. Let them consider the following. Not everyone needs to study metaphysics. Many a talent does well in thorough and even profound sciences that stay closer to intuition, yet cannot succeed in investigations that work through purely abstract concepts. In that case such people should use their gifts on another subject. But anyone who undertakes to judge metaphysics, or even to write one, must fully meet the demands made here. They can do so either by accepting my solution, or by refuting it thoroughly and putting another in its place. What they cannot do is brush it aside. Finally, the much-decried obscurity (a customary cover for one's own laziness or poor eyesight) also has its use. All those who keep a careful silence about every other science speak like masters on questions of metaphysics and decide boldly. Their ignorance here does not, of course, stand out against the knowledge of others. Against genuine critical principles it does stand out, and of those one can therefore say:

"They keep the idle drones, a lazy herd, away from the hives."

Virg.

[²⁵⁷-1]: The farmer waits for the river to run dry; but it flows, and will flow, rolling on through all time.

Horat.

[²⁵⁸-1]: Yet *Hume* himself called this destructive philosophy metaphysics and valued it highly. "Metaphysics and morals," he says (Essays, Part 4, p. 214, German translation), "are the chief branches of science; mathematics and natural science are not half as valuable." But this sharp-minded man was looking only at the negative benefit of curbing the exaggerated claims of speculative reason. That would put a complete end to the many endless and bitter quarrels that confuse humankind. But he overlooked the positive damage done when reason is robbed of its most important prospects. Only by those prospects can reason set the will the highest goal of all its efforts.

Preliminary reminder



Prolegomena.

Preliminary Remark

on the

Special Character of All Metaphysical Knowledge.

Section 1



§ 1.

On the Sources of Metaphysics.

If you want to present any body of knowledge as a *science*, you must first be able to say exactly what sets it apart from every other science, what it does not share with any of them, and so what is *its own*. Otherwise the boundaries between the sciences run together, and none of them can be treated thoroughly according to its nature.

This special mark may lie in a difference of *object*, or of the *sources of knowledge*, or of the *kind of knowledge*, or in some of these together, if not in all of them. Whichever it is, the idea of a possible science and of its territory rests on it first of all.

Take first the *sources* of metaphysical knowledge. It is already part of the concept of metaphysics that these cannot be empirical. Its principles (which include not only its basic propositions but also its basic concepts) must therefore never be taken from experience. For metaphysical knowledge is meant to be not physical but metaphysical, that is, to lie beyond experience. So neither outer experience, which is the source of physics proper, nor inner experience, which is the basis of empirical psychology, will underlie it. It is therefore knowledge a priori, that is, knowledge from pure understanding and pure reason.

But in this respect it would not differ from pure mathematics. So it will have to be called *pure philosophical* knowledge. For the meaning of that expression I refer to the *Critique of Pure Reason*, p. 712 ff., where the difference between these two uses of reason is set out clearly and fully. That is enough about the sources of metaphysical knowledge.

Section 2



§ 2.

On the Kind of Knowledge That Alone Can Be Called Metaphysical.

a)

On the Difference Between Synthetic and Analytic Judgments in General.

Metaphysical knowledge must consist entirely of judgments a priori. That is what the special character of its sources requires. But whatever origin judgments may have, and whatever their logical form, they differ in content. Some merely *explain*: they add nothing to the content of our knowledge. Others *extend* it: they enlarge the knowledge we already have. The first kind can be called *analytic* judgments, the second *synthetic* judgments.

An analytic judgment says in its predicate nothing but what was already thought in the subject's concept, only less clearly and with less awareness. When I say that all bodies are extended, I have not widened my concept of body in the least. I have only taken it apart. Extension was already thought in that concept before the judgment, even though it was not stated. So the judgment is analytic. By contrast, the statement that some bodies are heavy has something in its predicate that the general concept of body does not actually contain in thought. It enlarges my knowledge, because it adds something to my concept. So it must be called a synthetic judgment.

b)

All Analytic Judgments Share One Principle, the Principle of Contradiction.

All analytic judgments rest entirely on the principle of contradiction. By their nature they are a priori knowledge, whether the concepts they use are empirical or not. In an affirmative analytic judgment the predicate is already thought within the concept of the subject. So it cannot be denied of the subject without contradiction. In the same way, in a negative analytic judgment, the opposite of the predicate has to be denied of the subject, once more on the strength of the principle of contradiction. That is how it stands with the statements “All bodies are extended” and “No body lacks extension (is simple).”

For the same reason all analytic statements are judgments a priori, even when their concepts are empirical. Take “Gold is a yellow metal.” To know this, I need nothing from experience beyond my concept of gold, which contains that this body is yellow and a metal. That is just what made up my concept. All I had to do was break it down, without looking around for anything outside it.

c)

Synthetic Judgments Need a Principle Other Than the Principle of Contradiction.

There are synthetic judgments a posteriori, whose origin is empirical. Yet some synthetic judgments are also certain a priori, and arise from pure understanding and reason. Both kinds agree in this: they can never arise from the principle of analysis, the principle of contradiction, alone. They need a quite different principle. Yet whatever principle they are derived from, they must always be derived in a way that *accords* with the principle of contradiction. For nothing may conflict with that principle, although not everything can be derived from it. First I want to sort synthetic judgments into classes.

1) *Judgments of experience* are synthetic every time. It would be nonsense to ground an analytic judgment on experience. To form the judgment I do not have to go beyond my concept at all, so I need no evidence from experience. That a body is extended is a statement that stands firm a priori, and no judgment of experience. Before turning to experience, I already hold in the concept all the conditions for my judgment. From it I only have to draw out the predicate by the principle of contradiction. In doing so I also become aware of the *necessity* of the judgment, which experience would not even teach me.

2) *Mathematical judgments* are all synthetic. This statement has so far entirely escaped the notice of those who analyze human reason. It even seems to be the exact opposite of all their expectations, although it is beyond dispute and very important in its consequences. People found that mathematicians' inferences all proceed by the principle of contradiction, as any apodictic certainty requires. So they convinced themselves that the basic principles are also known from the principle of contradiction. They were badly mistaken. A synthetic statement can certainly be understood by the principle of contradiction, but only by presupposing another synthetic statement from which it can be inferred. It can never be understood by that principle in itself.

First we must note that genuine mathematical statements are always judgments a priori and not empirical, because they carry necessity with them, and necessity cannot be taken from experience. If anyone will not grant this, very well: I limit my claim to *pure mathematics*. Its very concept implies that it contains not empirical knowledge but only pure knowledge a priori.

At first one would think that the statement $7 + 5 = 12$ is just analytic, a result of the concept of a sum of seven and five by the principle of contradiction. But look at it more closely. The concept of the sum of 7 and 5 holds nothing beyond the combining of the two numbers into one. That does not at all tell us what the single number is that includes both. Merely by thinking of the combining of seven and five, I have not yet thought of the concept of twelve. However long I take my concept of such a possible sum apart, I will never find twelve in it. We have to go beyond these concepts by calling on an intuition that corresponds to one of the two numbers. It might be our five fingers, or, as *Segner* does in his arithmetic, five points. Then we add, one by one, the units of the five that intuition gives us to the concept of seven. So with the statement $7 + 5 = 12$ we really do enlarge our concept. We add to the first concept a new one that was not thought in it at all. That is, an arithmetic statement is always synthetic. We notice this more plainly when we take somewhat larger numbers. Then it is clear that, however we turn our concept this way and that, we could never find the sum by merely taking our concepts apart, without the help of intuition.

No principle of pure geometry is analytic either. The claim that a straight line is the shortest connection between two points is a synthetic statement. My concept of the straight contains nothing about size, only a quality. So the concept of the shortest is wholly added, and no analysis can draw it out of the concept of the straight line. Intuition must be called in to help here, and only with its help is the synthesis possible.

Some other principles that geometers presuppose are indeed analytic and rest on the principle of contradiction. But, like identical statements, they only serve as links in the chain of method and not as principles. Examples are $a = a$ (the whole equals itself), or $(a + b) > a$ (the whole is larger than its part). Even these, though they hold by mere concepts, are allowed into mathematics only because they can be presented in intuition. What commonly makes us believe that the predicate of such apodictic judgments is already in our concept, so that the judgment is analytic, is just an ambiguity in the wording. We *are supposed* to think some predicate along with a given concept, and that necessity is already bound up with the concepts. But the question is not what we *should* add in thought to the given concept. The question is what we *actually think in it*, even if only dimly. And there it turns out that the predicate does attach to the concept necessarily, yet not directly. It attaches by means of an intuition that has to be added.

Section 3



§ 3.

Remark

how judgments are generally divided into analytic and synthetic ones.

This division is indispensable for a critique of human understanding, and so deserves to be *classic* there. Elsewhere I do not know that it has any considerable use. And here I find the reason why dogmatic philosophers neglected it. They looked for the sources of metaphysical judgments only inside metaphysics itself, and not outside it, in the laws of pure reason generally. So they overlooked this division, though it seems to offer itself. The famous *Wolff* did so, and so did the sharp-minded *Baumgarten*, who followed in his footsteps. They could look for the proof of the principle of sufficient reason, which is obviously synthetic, in the principle of contradiction. By contrast, I do find a hint of this division already in *Locke's* Essay Concerning Human Understanding. In Book 4, Chapter 3, § 9 ff., he had already spoken of the different ways representations connect in judgments, and of their sources. One source he places in identity or contradiction (analytic judgments). The other he places in the existence of representations in a subject (synthetic judgments). In § 10 he admits that our knowledge (a priori) of the second kind is very narrow and almost nothing. But what he says about this kind of knowledge is so little definite and so far from being reduced to rules that no one should be surprised that nobody, not even Hume, took it as a cue for reflecting on propositions of this sort. General and

yet definite principles like these are not easily learned from others, to whom they have only floated before the mind obscurely. You must first have come upon them yourself by your own thinking. Afterward you find them elsewhere too, in places where you certainly would not have found them first, because the authors never realized that such an idea lay behind their own observations. People who never think for themselves still have the sharp eye to spot everything, once it has been pointed out, in what has been said before, though no one could see it there beforehand.

General questions



The Prolegomena's

General Question:

Can There Be Any Metaphysics at All?

Section 4



§ 4.

Suppose there were a metaphysics that could stand as a science. Suppose we could say: here is metaphysics, you only need to study it, and it will win you over to its truth irresistibly and unchangeably. Then this question would be unnecessary. Only the question that tests our ingenuity, rather than proving the existence of the thing, would remain: *how it is possible*, and how reason goes about reaching it. But human reason has not been so fortunate in this case. We cannot point to a single book, as we can to a *Euclid*, and say: this is metaphysics, here you find the chief aim of this science, the knowledge of a highest being and of a future world, proved from principles of pure reason. We can be shown plenty of statements that are apodictically certain and that nobody has ever disputed. But these are all analytic. They concern the materials and building stuff of metaphysics, and not the extension of knowledge, which is supposed to be our real aim with it (§ 2, c). You may also show us synthetic propositions (for example, the principle of sufficient reason). You have never proved them from mere reason, that is, a priori, as was your duty, but we gladly grant them to you. Yet when you want to use them for your main purpose, you fall into such untenable and uncertain assertions that, in every age, one metaphysics has contradicted another, either in its assertions or in its proofs. In doing so it has destroyed its own claim to lasting approval. The attempts to build up such a science were undoubtedly also the first cause of the skepticism

that arose so early. This is a way of thinking in which reason treats itself so violently that it could only have arisen from complete despair of satisfaction in its most important aims. Long before people began to question nature by method, they questioned only their isolated reason, which common experience had already trained to some degree. Reason is always present to us, whereas laws of nature usually have to be sought out with effort. So metaphysics floated on top like foam. But as soon as the foam that had been scooped up dissolved, another appeared on the surface, which some always eagerly collected. Others, instead of looking in the depths for the cause of this phenomenon, thought themselves wise for laughing at the vain efforts of the first group.

What is essential in pure *mathematical* knowledge, and sets it apart from all other knowledge a priori, is that it must proceed not at all *from concepts* but always only by the construction of concepts (Critique, p. 713). In its statements it must therefore go beyond the concept to what the corresponding intuition contains. So its statements can never, and should never, arise by taking concepts apart, that is, analytically. They are therefore all synthetic.

But I cannot help noting the harm that neglecting this observation, otherwise easy and seemingly unimportant, has done to philosophy. *Hume* felt the calling worthy of a philosopher to survey the entire field of pure knowledge a priori, in which human understanding claims such great possessions. Rashly, he cut off one whole province of it, and the most considerable one, namely pure mathematics. He imagined that its nature, its constitution, so to speak, rested on entirely different principles, namely only on the principle of contradiction. He had not made the division of statements as formally and generally or under the names I use here. Still, it amounted to saying that pure mathematics contains only *analytic* statements, while metaphysics contains synthetic statements a priori. In this he was badly wrong, and the error had badly damaging consequences for his whole account. If he had avoided it, he would have widened his question about where our synthetic judgments come from, far past his metaphysical concept of causality, and applied it to the possibility of mathematics a priori as well. For he had to accept mathematics as synthetic too. Then he could in no way have based his metaphysical statements on mere experience,

since he would otherwise have made the axioms of pure mathematics depend on experience too. He was far too perceptive to do that. The good company that metaphysics would then have kept would have protected it from the danger of shabby mistreatment. The blows intended for metaphysics would have had to strike mathematics too, which was not his view and could not be. In that case the sharp-minded man would have been drawn into reflections similar to those that occupy us now, and his incomparably beautiful style would have made them infinitely better.

Judgments that are *properly metaphysical* are all synthetic. A distinction is needed between judgments that merely *belong to* metaphysics and judgments that are properly *metaphysical*. Many of the former are analytic. But they only supply the means to metaphysical judgments, at which the aim of the science is entirely aimed, and which are always synthetic. When concepts belong to metaphysics, for instance the concept of substance, then the judgments that arise from merely taking them apart belong to metaphysics too. An example is: substance is what exists only as a subject. Through several analytic judgments of this kind we try to come close to a definition of the concepts. Yet analyzing a pure concept of the understanding (the kind metaphysics contains) goes forward in no other way than the analysis of any other concept, including empirical concepts that do not belong in metaphysics. An example of the latter is: air is an elastic fluid whose elasticity is not removed by any known degree of cold. So the concept is metaphysical, but the analytic judgment is not specifically so. For this science has something particular and its own in the production of its knowledge a priori. This must therefore be distinguished from what metaphysics has in common with all other knowledge of the understanding. For example, the statement that everything in things that is substance is persistent is a synthetic and properly metaphysical statement.

Suppose we have first collected, by certain principles, the concepts a priori that make up the matter of metaphysics and its building stuff. Then taking these concepts apart is highly valuable. It can also be set out separately, as a distinct part (a kind of *philosophia definitiva*) containing only analytic statements that belong to metaphysics, apart from all the synthetic statements that make

up metaphysics itself. For those analyses are of real use nowhere except in metaphysics, that is, for the sake of the synthetic statements that are to be generated from the concepts analyzed first.

The conclusion of this section is therefore that metaphysics is really concerned with synthetic statements a priori, and these alone make up its aim. For this aim it certainly needs many analyses of its concepts, and hence analytic judgments. Its procedure there does not differ from what happens in any other kind of knowledge, where one merely tries to make one's concepts distinct by analysis. But the generation of knowledge a priori, both from intuition and from concepts, and finally also of synthetic statements a priori, in philosophical knowledge, makes up the essential content of metaphysics.

We have therefore had enough of dogmatism, which teaches us nothing, and of skepticism, which promises us nothing at all, not even the rest of a permitted ignorance. We are called on by the importance of the knowledge we need. We are made distrustful by long experience of every piece of knowledge we think we possess, or that offers itself to us under the title of pure reason. One critical question remains, and its answer will allow us to arrange what we do from now on: *Is metaphysics possible at all?* This question, however, must not be answered by skeptical objections to certain assertions of an actual metaphysics (for we do not yet admit any). It must be answered from the concept of such a science, which is still only *problematic*.

In the *Critique of Pure Reason* I took the synthetic way with this question. That is, I investigated pure reason itself, and in this source itself I tried to determine, by principles, the elements as well as the laws of its pure use. This work is hard. It requires a determined reader to think their way step by step into a system that assumes nothing as given except reason itself. It tries to develop knowledge from its original seeds without leaning on any fact. *Prolegomena*, by contrast, are meant as preliminary exercises. They are meant to show what has to be done to bring a science into reality if possible, rather than to present the science itself. So they must rest on something we already know to be reliable. From there we can set out with confidence and ascend to the sources we do not yet know. Their discovery will not just account for what we knew but will also

show a wide range of other knowledge, all arising from the same sources. The method of the Prolegomena, above all those that are to get us ready for a future metaphysics, will accordingly be *analytic*.

Fortunately, though we cannot assume that metaphysics is *actually* a science, we can say with confidence that certain pure synthetic knowledge a priori is actual and given: namely *pure mathematics* and *pure natural science*. Both contain statements that are universally acknowledged. Some are apodictically certain by mere reason. Others are certain by the general agreement of experience, and yet are acknowledged as independent of experience. So we have at least some *undisputed* synthetic knowledge a priori. We need not ask whether it is possible, since it is actual. We need only ask *how it is possible*, in order to derive from the principle that makes what is given possible the possibility of everything else.

Prolegomena.

The General Question:

How Is Knowledge from Pure Reason Possible?

Section 5



§ 5.

We have seen the great gap between analytic and synthetic judgments. How analytic statements can be true is simple to see, since they depend on nothing but the principle of contradiction. Synthetic statements a posteriori, the ones drawn from experience, need no special explanation either. Experience is itself only a continuous putting together (synthesis) of perceptions. So only synthetic statements a priori are left, and how they are possible has to be searched out and investigated, because they must depend on some principle other than the principle of contradiction.

But we must not begin by looking here for the *possibility* of such statements, that is, by asking whether they are possible. There are plenty of them, actually given with undisputed certainty. Our method now is to be analytic, so we will start from the fact that such synthetic knowledge from pure reason is actual. Even so, we still have to look into the ground of this possibility and ask *how* this knowledge is possible. From the principles of its possibility we will then be able to determine the conditions of its use, and its extent and limits. The actual task, put with scholastic precision and the one on which everything depends, is therefore:

How are synthetic statements a priori possible?

Above I put it a little differently, for the sake of ease, as a question about knowledge from pure reason. This time I could do so without harming the insight we want. Here we are concerned only with metaphysics and its sources. After the remarks made earlier, I hope readers will always remember that whenever we speak here of knowledge from pure reason, we never mean the analytic kind, only the synthetic.^[276-1]

The whole standing or falling of metaphysics, and so its very existence, depends on solving this task. Someone may present their claims in metaphysics with the most impressive appearance and pile conclusion upon conclusion until we are crushed. If they have not first answered that question satisfactorily, I have the right to say: all of it is empty, baseless philosophy and sham wisdom. You speak by pure reason and presume to create knowledge a priori, as it were. You do not just take given concepts apart. You put forward new connections that do not rest on the principle of contradiction, and you think you can see them entirely independently of experience. How do you come to this, and how do you propose to justify such claims? You cannot be allowed to appeal to the agreement of universal human reason. That is a witness whose authority rests only on public rumor. "Whatever you show me like this, I refuse to believe, and I hate." *Horat.*

The answer to this question is indispensable, but it is also difficult. The main reason it has not been attempted long ago is that nobody even thought such a thing could be asked. A second reason is that answering this one question satisfactorily takes far more sustained, deeper, and harder thought than even the longest work of metaphysics ever required, although it promised its author immortality when it first appeared. Every discerning reader who thinks carefully about this task, as it demands, will at first be frightened by its difficulty. They will think it unsolvable. And if there were not in fact such pure synthetic knowledge a priori, they would think it entirely impossible. That is exactly what happened to *David Hume*, though he was far from picturing the question in such generality as is done here, and must be done if the answer is to be decisive for all of metaphysics. For how is it possible, said the sharp-minded man, that when I am given a concept I can go beyond it and link it to another

one that is not contained in it at all, and moreover do so as if the other *necessarily* belonged to it? Only experience can give us such links, he concluded from the difficulty that he took for an impossibility. All the supposed necessity, or, what is the same, all supposed knowledge a priori, is nothing but a long habit of holding something to be true, so that we mistake subjective necessity for objective.

If readers complain about the trouble and effort I put them to in solving this task, they only have to try solving it themselves in an easier way. Perhaps they will then feel obliged to the person who took on research so deep on their behalf. They may even be somewhat surprised at the ease the solution could still be given, given the nature of the matter. It took years of effort to solve this task in its full generality (in the sense mathematicians give the word, namely, sufficient for all cases) and finally to present it in the analytic form in which readers will find it here.

All metaphysicians are therefore solemnly and lawfully suspended from their business until they have answered satisfactorily the question: *How is synthetic knowledge a priori possible?* Only in this answer consist the credentials they would have to show if they want to bring us anything on behalf of pure reason. Lacking it, they can expect only to be turned away, as they have often been, by sensible people who have been deceived so many times, without any further look at what they offer.

Suppose they wanted to carry on their business not as a *science* but as an *art* of wholesome persuasion fitted to common sense. Then in fairness this trade could not be forbidden them. They would then speak the modest language of a reasonable faith. They would admit that they are not allowed even to *guess* about what lies beyond the limits of all possible experience, let alone to *know* anything. They may only *assume* something (not for speculative use, which they have to give up, but only for practical use) that is possible, even indispensable, as a guide for understanding and will in life. Only so can they bear the name of useful and wise people. They can do so all the more, the more they give up the name of metaphysicians. For metaphysicians want to be speculative philosophers. And where judgments a priori are concerned, one cannot settle

for stale probabilities. What is supposedly known a priori is thereby announced as necessary. So metaphysicians cannot be allowed to play with guesses. Their claim must be science, or it is nothing at all.

We can say that all of transcendental philosophy, which necessarily comes before all metaphysics, is itself no more than the full answer to the question posed here, only set out in systematic order and in full detail. So we can say that until now we have had no transcendental philosophy. What bears that name is really a part of metaphysics. But transcendental philosophy is supposed to settle the possibility of metaphysics in the first place, and so must come before it. So we should not be surprised that an entire science is needed just to answer one single question adequately. This science has to be entirely new in itself, since it is cut off from help from any other. Neither should we be surprised that solving the question brings effort and difficulty, and even some obscurity.

We now move on to this solution, and by the analytic method, in which we assume that such knowledge from pure reason is actual. Here we can appeal only to two *sciences* of theoretical knowledge (the only kind in question here): *pure mathematics* and *pure natural science*. Only these can present objects to us in intuition. If any knowledge a priori turned up in them, they could therefore show its truth, or its agreement with the object, in the concrete, that is, its *actuality*. From there we could then move on along the analytic road to the ground of its possibility. This makes our task much easier. General considerations are not only applied to facts here but start from them, whereas in the synthetic procedure they would have to be derived wholly in the abstract from concepts.

Now we want to climb from these actual and well-grounded kinds of pure knowledge a priori to a possible one we are looking for, namely metaphysics as a science. To do so, we must bring under our main question one more thing. It is what gives rise to metaphysics, and lies at the base of metaphysics as a merely natural, given knowledge a priori, though one whose truth is not beyond suspicion. Working on it, without any critical investigation of how it is possible, is commonly already called metaphysics. In one word, it is the natural disposition toward such a science. In this way the main transcendental question will be divided into four further questions and answered step by step.

- 1) *How is pure mathematics possible?*
- 2) *How is pure natural science possible?*
- 3) *How is metaphysics in general possible?*
- 4) *How is metaphysics possible as a science?*

We can see that the solution of these tasks is mainly meant to present the essential content of the Critique. Even so, it has something distinctive that is worth attention on its own. For given sciences, it looks for their sources in reason itself, in order to investigate and measure this faculty of knowing something a priori through the deed itself. These sciences themselves gain from this, not in content but in right use. And since they give occasion to shed light on a higher question about their common origin, they also help to clarify their own nature better.

[²⁷⁶-1]: We cannot prevent it: as knowledge gradually advances, certain expressions that have already become classic, and that date from the infancy of the science, will later be found inadequate and ill-fitting. A certain new and more suitable use then risks being confused with the old. The analytic method, as opposed to the synthetic, is something quite different from a collection of analytic statements. 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 way of teaching one often uses nothing but synthetic statements, as mathematical analysis shows. It could better be called the *regressive* way of teaching, as opposed to the synthetic or *progressive* way. The name analytic also occurs as the main part of logic. There it is the logic of truth, opposed to dialectic, with no actual regard for whether the knowledge belonging to it is analytic or synthetic.

First part: How is pure mathematics possible?



The Main Transcendental Question

Part One.

How Is Pure Mathematics Possible?

Section 6



§ 6.

Here, then, is a great and proven body of knowledge. Even now it is admirably wide, and it promises unlimited growth in the future. It carries apodictic certainty through and through, that is, absolute necessity. So it rests on no grounds drawn from experience, and is a pure product of reason. Yet it is also synthetic through and through. “How is it possible for human reason to produce such knowledge entirely a priori?” This faculty does not stand on experience, and cannot. So does it not presuppose some ground of knowledge a priori, lying deeply hidden, one that these very effects might bring to light, if we traced them patiently back to where they start?

Section 7



§ 7.

We find, however, that all mathematical knowledge has this special feature: it must first present its concept *in intuition*, and indeed a priori, in an intuition that is not empirical but pure. Without this means it cannot take a single step. That is why its judgments are always *intuitive*. Philosophy, by contrast, has to be content with *discursive* judgments *from mere concepts*. It can illustrate its apodictic teachings by intuition, but can never derive them from it. What we notice here about mathematics already points us to the first and most basic condition that makes it possible. There has to be some *pure intuition* beneath it, one in which it can present all its concepts in the concrete and yet a priori, or, as people say, *construct* them.^[281-1] If we can find out this pure intuition and how such an intuition is possible, we can easily explain how synthetic statements a priori are possible in pure mathematics, and so how this science itself is possible. Empirical intuition makes it easy for us to extend synthetically, in experience, the concept that we have formed of an object of intuition, by new predicates that the intuition itself offers. Pure intuition will do the same. There is one difference. In the second case the synthetic judgment a priori will be certain and apodictic. In the first case it will be certain only a posteriori and empirically. This is because the empirical judgment contains only what is found in the accidental empirical intuition. The judgment a priori contains what must

necessarily be found in the pure intuition. For, as an intuition a priori, the pure intuition is inseparably tied to the concept *before all experience* or particular perception.

[²⁸¹-1]: See Critique, p. 713.

Section 8



§ 8.

But the difficulty seems to grow rather than shrink at this step. The question now is: *how is it possible to intuit something a priori?* An intuition is a representation that would depend directly on the presence of the object. So it seems impossible to intuit anything a priori *originally*. For then the intuition would have to occur without any object, either earlier or present now, to which it could refer. It could not be an intuition. With concepts it is different. We can quite well form some of them a priori, namely those that contain only the thought of an object in general, without being in any direct relation to the object. Examples are the concepts of magnitude and of cause. But even these need some use in the concrete to gain meaning and sense. That is, they must be applied to some intuition by which an object of theirs is given to us. But how can the intuition of the object come before the object itself?

Section 9



§ 9.

If our intuition had to be of the kind that represents things *as they are in themselves*, there would be no intuition a priori at all. It would always be empirical, because I can only know what an object contains in itself once it stands there before me. Even so, it would be a mystery how my intuition of a present thing could show me what it is in itself, since its properties cannot move over into my power of representation. But suppose that were granted. Such an intuition would still not occur a priori, that is, before the object is presented to me. Without that, no ground can be thought of for the relation of my representation to it, unless it rested on inspiration. So there is only one way for my intuition to precede the reality of the object and occur as knowledge a priori: *it must contain nothing but the form of sensibility, which in my subject precedes all actual impressions by which I am affected by objects*. I can know a priori, after all, that objects of the senses can only be intuited according to this form of sensibility. It follows that statements concerning only this form of sensible intuition will be possible and valid for objects of the senses. Likewise, in reverse, intuitions that are possible a priori can never concern anything but objects of our senses.

Section 10



§ 10.

So it is only the form of sensible intuition through which we can intuit things a priori. By it, however, we also know objects only as they can *appear* to us (to our senses), not as they may be in themselves. This assumption is absolutely necessary if synthetic statements a priori are to be granted as possible, or, if they really are found, if we are to understand how they are possible and settle that in advance.

Now space and time are the intuitions that pure mathematics places at the basis of all its knowledge and judgments, which present themselves as apodictic and necessary. Mathematics has to show every one of its concepts first in an intuition, and pure mathematics has to show them in a pure one. That is, it must construct them. Without this it cannot take a step, because it cannot proceed analytically, by taking concepts apart, but only synthetically. It has no way forward as long as pure intuition is missing, since only in pure intuition can the material for synthetic judgments a priori be given. Geometry rests on the pure intuition of space. Arithmetic forms its number concepts by adding units one after another in time. Above all, pure mechanics can form its concepts of motion only through the representation of time. Both representations are mere intuitions. Take the empirical intuitions of bodies and their changes (motion) and leave out everything empirical, everything belonging to sensation. Space and time still remain. So they are pure intuitions, which underlie those empiri-

cal ones a priori and therefore can never be left out. But the very fact that they are pure intuitions a priori proves that they are only forms of our sensibility. These forms have to come before any empirical intuition, which is to say before we perceive real objects. According to them objects can be known a priori, though of course only as they appear to us.

Section 11



§ 11.

The task of this part is therefore solved. Pure mathematics is possible as synthetic knowledge a priori only in this way: it deals with nothing but objects of the senses. The empirical intuition of these objects rests on a pure intuition (of space and time), and indeed a priori. It can do so because pure intuition is only the form of sensibility, which comes before objects actually appear, since it is what makes their appearing possible in the first place. This ability to intuit a priori, however, does not concern the matter of appearance, that is, what in it is sensation, for that is the empirical part. It concerns only its form, space and time. Suppose someone had the slightest doubt that space and time are not at all properties of things in themselves but are merely determinations attached to their relation to sensibility. I would like to know how that person finds it possible to know a priori, before any acquaintance with things, that is, before they are given to us, what the nature of their intuition must be. Yet that is exactly the case with space and time. This becomes fully intelligible as soon as the two count as nothing more than formal conditions of our sensibility, and objects count as mere appearances. In that case the form of appearance, meaning pure intuition, can indeed be represented from within ourselves, that is, a priori.

Section 12



§ 12.

To add something by way of illustration and confirmation, we need only look at the usual and unavoidably necessary procedure of geometers. All proofs of complete equality between two given figures (where one can be put in the place of the other in every respect) come down in the end to their coinciding. This is plainly nothing but a synthetic statement resting on direct intuition. This intuition must be given pure and a priori. Otherwise the statement could not count as apodictically certain, and would have only empirical certainty. It would merely say: we always observe it so, and it holds only as far as our perception has reached so far. Take the claim that complete space (which is itself no longer the boundary of another space) has three dimensions, and that space in general cannot have more. It is built on the statement that at most three lines can cross each other at right angles at a single point. This statement cannot be shown from concepts at all. It rests directly on intuition, and on pure intuition a priori, since it is apodictically certain. Or take the demand that a line be drawn to infinity (*in indefinitum*), or that a series of changes (for example, distances traveled by motion) be continued to infinity. This presupposes a representation of space and time that can belong only to intuition, namely as something that nothing in itself limits. For from concepts it could never be inferred. So pure intuitions a priori really do underlie mathematics, and they make its synthetic and apodictically valid statements possible. Therefore our transcen-

dental deduction of the concepts of space and time at the same time explains the possibility of pure mathematics. Unless we have such a deduction, and unless we assume that “everything that may be given to our senses (outer senses in space, the inner sense in time) is intuited by us only as it appears, not as it is in itself,” pure mathematics might be granted but could by no means be understood.

Section 13



§ 13.

Some people still cannot get free of the notion that space and time are real properties belonging to things in themselves. They can try their wits on the following paradox. If they fail to solve it, they may, for a few moments at least, be free of prejudice, and suspect that reducing space and time to mere forms of our sensible intuition may have good grounds after all.

Suppose two things are completely the same in every respect that can be known of each one taken by itself (in every determination of size and quality). Then it should follow that one could be put in the place of the other in all cases and relations, without the swap causing the slightest noticeable difference. And in fact this is how it is with plane figures in geometry. But various spherical figures show, despite that complete inner agreement, such a difference in their outer relation that one cannot be put in the place of the other at all. Take two spherical triangles on opposite hemispheres that share an arc of the equator as their base. They can be exactly alike in both sides and angles. If either is described alone and completely, nothing turns up in it that would not be in the description of the other. And yet one cannot be put in the place of the other (that is, on the opposite hemisphere). So there is an inner difference between the two triangles. No understanding can state it as an inner difference, and it shows itself only through the outer relation in space. But I will give more ordinary cases, which can be taken from everyday life.

What could be more similar to my hand or my ear, and in every respect more nearly the same, than its image in the mirror? And yet I cannot put such a hand, as seen in the mirror, in the place of its original. Where the original was a right hand, the mirror shows a left. A right ear's image is a left ear, and this can never take the place of the first. No inner differences are present here that any understanding could think. Yet the differences are inner as far as the senses teach. The left hand cannot be enclosed within the same boundaries as the right, despite all the equality and likeness between them. They cannot be made congruent. A glove for one hand does not fit the other. So what is the answer? What we see here are not representations of things as they are in themselves, and as pure understanding would know them. They are sensible intuitions, that is, appearances. Their possibility depends on how certain things, unknown in themselves, stand to something else, namely our sensibility. Space, for its part, is the form of the outer intuition of this sensibility. The inner determination of any space is possible only through the determination of its outer relation to the whole of space, of which it is a part (its relation to the outer sense). In other words, the part is possible only through the whole. That never happens when things in themselves are objects of mere understanding, but it does happen with mere appearances. So we also cannot make the difference between similar and equal but incongruent things (such as snail shells coiled in opposite directions) understandable by any single concept. We can do so only through the relation to the right and left hand, which goes directly to intuition.

Remark I.

Pure mathematics, and especially pure geometry, can have objective reality on just one condition: that it deals solely with objects of the senses. About these the principle stands firm that our sensible representation is in no way a representation of things as they are in themselves, but only of how they appear to us. From this it follows that the statements of geometry are not specifications of a mere product of our poetic imagination, which could not be reliably applied to actual objects. They hold necessarily of space, and therefore of everything that may be found in space, since space is only the form of all outer appearances, the form in which only objects of the senses can ever be given to

us at all. Sensibility, whose form is what geometry takes as its basis, is what the possibility of outer appearances rests on. So these appearances can never hold anything except what geometry lays down for them. Things would be quite different if our senses had to present objects as they are in themselves. Then it would not follow at all, from the representation of space that the geometer places at the basis a priori with all sorts of properties, that all of this, along with what is deduced from it, must hold in nature exactly so. People would take the geometer's space for mere fiction and would not credit it with objective validity. They would not see at all why things should necessarily agree with the picture that we form of them spontaneously and in advance. But suppose this picture, or rather this formal intuition, is the essential trait of our sensibility, the only means by which objects are given to us. And suppose this sensibility presents us not with things in themselves but only with their appearances. Then it is easy to grasp, and at the same time proved beyond contradiction, that all outer objects of our world of sense must agree necessarily and with perfect precision with the statements of geometry. For sensibility, through its form of outer intuition (space), with which the geometer is occupied, first makes those objects possible as mere appearances. History of philosophy will always have to note one remarkable phenomenon: a time came when even mathematicians who were philosophers as well started to doubt something. They did not doubt the correctness of their geometrical statements, so far as these concern only space. They doubted the objective validity and application of this concept itself, and of all its geometrical determinations, to nature. They feared that a line in nature might consist of physical points, and so that real space in the object could be made of simple parts, although the space in the geometer's thought cannot consist of such parts at all. They did not recognize the following points. This space in thought makes physical space possible, that is, the extension of matter itself. Physical space is no property of things in themselves, but only a form of our sensible power of representation. Every object in space is a mere appearance, that is, no thing in itself but a representation of our sensible intuition. And the space as the geometer thinks it is exactly the very form of sensible intuition that we discover in ourselves a priori, and which contains the ground of the possibil-

ity of all outer appearances (as to their form). So these appearances must agree necessarily, and with the greatest precision, with the geometer's statements. He draws these statements not from any made-up concept but from the subjective basis of all outer appearances, namely sensibility itself. Only in this way, and in no other, can the geometer be protected against every quibble of a shallow metaphysics about the undoubted objective reality of his statements. To that metaphysics they must seem strange, because it does not go back to the sources of its concepts.

Remark II.

Whatever is to be given to us as an object has to be given to us in intuition. All our intuition, though, happens only by means of the senses. The understanding intuits nothing, it only reflects. Now, by what has just been proved, the senses never let us know things in themselves, in any single respect, but only their appearances, which are mere representations of sensibility. "So all bodies, along with the space in which they are found, are to be taken for merely representations in us, and exist only than merely in our thoughts." Is this not plain idealism?

Idealism consists in the claim that there are only thinking beings. The other things we think we perceive in intuition would be only representations in the thinking beings, and no object outside them would correspond to them. I say the opposite. Things are presented to us as objects of our senses located outside us. As for what they may be in themselves, we know nothing. All we know is their appearances, meaning the representations they cause in us when they affect our senses. So I certainly admit that there are bodies outside us. These are things that we know through the representations their influence on our sensibility provides us, though what they may be in themselves is entirely unknown to us. We give these representations the name of a body. The word therefore means only the appearance of that object, which is unknown to us but nonetheless real. Can this be called idealism? It is exactly the opposite.

It is something generally accepted and granted, long before the time of *Locke* and most of all after it, that without harming the real existence of outer things one can say of many of their properties that they do not belong to these

things in themselves but merely to how they appear, and exist by themselves apart from our representation. Warmth, color, taste, and the like belong here. But for important reasons I also count the remaining qualities of bodies, which are called primary (extension, place, and space in general with everything that goes with it, such as impenetrability or materiality, shape, and so on) as mere appearances. Against this there is not the slightest ground to object. Take someone who refuses to count colors as properties of the object in itself, and allows only that they attach to the sense of sight as modifications. That person cannot be called an idealist for this. In the same way my doctrine cannot be called idealistic just because I find that still more, indeed *all properties that make up the intuition of a body*, belong merely to its appearance. The existence of the thing that appears is not abolished by this, as in genuine idealism. It is only shown that we cannot know it as it is in itself through the senses at all.

I would like to know what my claims would have to be like in order not to amount to idealism. Without doubt I would have to say that our representation of space does not merely fit perfectly the relation our sensibility has to objects (that is what I have said), but that it is even completely similar to the object. I can attach no sense to that claim, any more than to the claim that the sensation of red resembles the property of the cinnabar that arouses this sensation in me.

Remark III.

From this we can easily brush aside an objection that is easy to foresee but empty: “that the ideality of space and time would turn the whole world of sense into mere illusion.” First, people had spoiled all philosophical insight into the nature of sensible knowledge. They did so by placing sensibility merely in a confused way of representing, by which we would still know things as they are, only without the ability to bring everything in our representation to clear awareness. We have proved the opposite: sensibility consists not in this logical difference of clarity or obscurity but in the genetic difference of the origin of knowledge itself. Sensible knowledge does not represent things as they are at all. It represents only the way they affect our senses. So through it only appearances, and not the things themselves, are handed to the understanding to reflect

on. After this needed correction, an objection appears that comes from an inexcusable and almost deliberate misreading, as if my doctrine turned all the things of the world of sense into mere illusion.

When an appearance is given to us, we are still quite free as to how we judge the thing from it. The appearance rests on the senses, but the judging rests on the understanding. The only question is whether there is truth in how the object is determined or not. The difference between truth and dream is not settled by the nature of the representations that are related to objects, for these are the same in both. It is settled by how they are connected, following the rules that determine how representations hang together in the concept of an object, and how far they can stand together in one experience or not. And it is not at all the fault of the appearances if our knowledge takes illusion for truth. That happens when intuition, by which an object is given to us, is taken for the concept of the object, or for its existence, which only the understanding can think. The senses show us the course of the planets now as direct, now as retrograde. There is neither falsehood nor truth in this. So long as we content ourselves that this is for now only appearance, we are not yet judging the objective character of their motion. But if the understanding does not take good care that this subjective way of representing is not taken for objective, a false judgment easily arises. So people say: they seem to go backward. The illusion, however, is not to be put down to the senses but to the understanding, whose job alone it is to draw an objective judgment from the appearance.

In this way, even if we did not think about the origin of our representations at all, we would connect our intuitions of the senses, whatever they contain, in space and time by the rules of the coherence of all knowledge in one experience. Depending on whether we are careless or careful, deceptive illusion or truth can then arise. This concerns only how sensible representations are used in the understanding, and not where they come from. In the same way, suppose I hold all representations of the senses, together with their form, space and time, to be nothing but appearances, and the latter to be a mere form of sensibility that is not found in the objects outside it at all. And suppose I use these representations only in relation to possible experience. Then there is not the slightest

temptation to error or illusion in my holding them to be mere appearances. For they can nonetheless hang together correctly in experience by the rules of truth. In this way all the statements of geometry about space apply equally to every object of the senses, and so with regard to all possible experience. It makes no difference whether I take space to be only a form of sensibility or something that belongs to the things themselves. Only in the first case, though, can I see how we could know those statements a priori to hold of all objects of outer intuition. Otherwise, as far as all possible experience goes, everything remains just as if I had never made this break with common opinion.

But suppose I venture to go beyond all possible experience with my concepts of space and time. That is unavoidable if I present them as properties attaching to things in themselves. (For what would then stop me from also letting them hold of those same things, whether or not my senses happen to be arranged to suit them?) Then an important error can arise, based on an illusion. I would be giving out as universally valid what was only a condition of the intuition of things, attaching to my subject, and which certainly holds for all objects of the senses, and so for all possible experience. I would have done so because I referred it to things in themselves and did not restrict it to the conditions of experience.

So the doctrine I hold about the ideality of space and time is far from turning the whole world of sense into mere illusion. It is instead the sole means of making sure that one of the most weighty kinds of knowledge, what mathematics teaches a priori, really applies to actual objects. It is the only way to prevent that knowledge from being regarded as mere illusion. Without this remark it would be quite impossible to decide whether the intuitions of space and time might be mere self-made fancies. We borrow them from no experience, and yet they lie in our representation a priori. If they were fancies, no object, at least no adequate one, would correspond to them, and geometry itself would be mere illusion. By contrast, we have been able to show its undisputed validity for all objects of the world of sense, just because these are mere appearances.

Second, it is equally far from the case that my principles, because they make appearances of the representations of the senses, change the truth of experience into mere illusion. They are instead the only way of heading off the transcendental illusion by which metaphysics has always been deceived. It has thereby been led into the childish pursuit of catching soap bubbles, because it took appearances, which are only representations, for things in themselves. Out of this came all those remarkable scenes of the antinomy of reason, which I will mention later. They are removed by this one observation: an appearance produces truth as long as it is used in experience. As soon as it goes beyond the limit of experience and becomes transcendent, it produces nothing but illusion.

So I leave the things we represent to ourselves through the senses their reality. I restrict only our sensible intuition of these things, in this way: in no respect, not even in the pure intuitions of space and time, does it represent more than the mere appearance of those things, and never their character in themselves. This is therefore no thoroughgoing illusion that I have ascribed to nature. My protest against any charge of idealism is so decisive and plain that it might even seem unnecessary, were there not unauthorized judges. They would like to have an old name for every departure from their own perverse though common opinion. They never judge the spirit of philosophical names but cling only to the letter. They stand ready to put their own fancy in the place of well-defined concepts, and so to twist and disfigure them. I have myself given my theory the name of transcendental idealism. That gives no one the right to confuse it with the empirical idealism of *Descartes*. His idealism was only a problem. In *Descartes's* opinion, because it was unsolvable, everyone was free to deny the existence of the bodily world, since the problem could never be answered satisfactorily. Nor should it be confused with the mystical and visionary idealism of *Berkeley*. Against it and similar fancies our Critique rather contains the real antidote. For the idealism I so named did not concern the existence of things (doubting that is what makes up idealism in its received sense), which it never occurred to me to doubt. It concerned just the way things are represented to the senses, a way to which space and time belong above all. Of these, and so of all appearances in general, I have only shown that they are not

things (but mere ways of representing), and also not determinations belonging to things in themselves. But the word transcendental, which in my usage never means a relation of our knowledge to things but only to the *faculty of knowledge*, was meant to prevent this misreading. Rather than let it cause more of it, I withdraw the name and wish my idealism to be called *critical*. If it is really a reprehensible idealism to turn actual things (not appearances) into mere representations, what name should we give to the one who does the reverse and makes mere representations into things? I think we can call it *dreaming* idealism, to distinguish it from the former, which may be called *visionary*. Both were supposed to be kept away by my idealism, otherwise called transcendental, better called *critical*.

Second part: How is pure natural science possible?



The Main Transcendental Question

Part Two.

How Can There Be a Pure Natural Science?

Section 14



§ 14.

Nature is the *existence* of things, insofar as universal laws determine it. Suppose “nature” meant the existence of things as they are in themselves. Then we could never know it, whether a priori or a posteriori. Not a priori. How could we ever know what belongs to things in themselves? Taking our concepts apart (analytic statements) cannot tell us, because I am not asking what is contained in my concept of a thing (that belongs to its logical essence). I am asking what the real thing adds to this concept, and what fixes the thing’s own existence outside my concept. My understanding prescribes no rule to the things themselves, and neither do the conditions under which it alone can link the determinations of their existence. The things do not adapt themselves to my understanding. My understanding would have to adapt itself to them. That means they would first have to be handed to me, so that I could draw these determinations from them. But then I would not know them a priori.

Knowing the nature of things in themselves would be just as impossible a posteriori. If experience were to teach me the *laws* that govern the existence of things, then those laws, insofar as they apply to things in themselves, would have to hold of them *necessarily* even apart from my experience. Experience tells me what there is and what it is like. It never tells me that it has to be this way and could not be otherwise. So experience can never teach us the nature of things in themselves.

Section 15



§ 15.

And yet we do in fact have a pure natural science. It states, a priori and with all the necessity that apodictic statements demand, the laws that nature obeys. For a witness I need only point to the preparatory teaching about nature that stands, under the title of universal natural science, ahead of all physics (which is built on empirical principles). Inside it we meet mathematics applied to appearances. We also find purely discursive principles (taken from concepts), which form the philosophical part of pure knowledge of nature. Yet some of its content is not entirely pure or free from sources in experience. Examples are the concepts of *motion*, *impenetrability* (the basis of the empirical concept of matter), *inertia*, and others. Because of them it cannot be called wholly pure natural science. It also deals only with objects of the outer senses, so it is no example of universal natural science in the strict sense. That science would have to place nature as such under universal laws, whether the object belongs to the outer senses or to the inner sense (the subject matter of physics, but also of psychology). Still, among the principles of that universal physics there are a few that really do have the universality we are after. Examples: *substance remains* and endures; and *whatever happens* is always *determined by a cause* in advance, according to steady laws; and so on. These are genuine universal laws of nature, and they hold completely a priori. So a pure natural science does exist, and the question is now: *how is it possible?*

Section 16



§ 16.

The word nature has a second sense, which fixes the *object*, whereas in the sense above it pointed only to the *lawfulness* with which the existence of things in general is determined. Taken materially, nature is the *sum total of all objects of experience*. That is the only sense that matters here. Things that could never be objects of any experience, if we wanted to know their nature, would push us toward concepts whose meaning could never be given in the concrete (in any example from a possible experience). We would have to form mere concepts of their nature, and there would be no way to decide whether those concepts have reality, that is, whether they refer to real objects or only to things of thought. Whatever cannot be an object of experience would have to be known in a hyperphysical way. We are not concerned with that. We are concerned with knowledge of nature whose reality experience can confirm, even though that knowledge is possible a priori and comes before all experience.

Section 17



§ 17.

The *formal* side of nature, in this narrower meaning, is therefore the lawfulness of all objects of experience. Insofar as it is known a priori, it is their *necessary* lawfulness. But as we have just shown, the laws of nature, in objects considered not in relation to possible experience but as things in themselves, can never be known a priori. Here, too, we are not dealing with things in themselves (we leave their properties undecided). We are dealing only with things as objects of possible experience, and their sum is what we call nature here. So I ask: when we speak of the possibility of knowledge of nature a priori, is it better to set the task in this way: how is it possible to know a priori the necessary lawfulness *of things* considered as objects of experience? Or in this way: how is it possible to know a priori the necessary lawfulness *of experience* itself, with regard to all its objects in general?

Looked at closely, the solution of the question comes to exactly the same thing either way, as far as pure knowledge of nature is concerned (which is really the point at issue). The subjective laws under which alone knowledge of things from experience is possible also hold of these things as objects of possible experience. They do not hold of them as things in themselves, but those do not enter the discussion here. It makes no difference whether I say: without the law that, when an event is perceived, it is always referred to something that precedes

it, on which it follows by a general rule, no judgment of perception could ever pass as experience. Or whether I put it this way: whatever experience teaches us happens must have a cause.

Still, it is more fitting to choose the first formula. We can have a priori, and before any given objects, knowledge of the conditions that must be met for any experience of them to be possible. But we can never know what laws they may be subject to in themselves, without relation to possible experience. So we can study the nature of things a priori in only one way: by inquiring into the conditions and the general (if subjective) laws on which alone such knowledge is possible as experience (as to its mere form). Then we can determine, by these, the possibility of things as objects of experience. If I chose the second way of putting it, and looked for the conditions a priori that make nature possible as an *object* of experience, I might easily slip into a misunderstanding. I might imagine that I was talking about nature as a thing in itself. Then I would be driven fruitlessly through endless efforts to find laws for things about which nothing is given to me.

So here we will be concerned only with experience and the universal conditions of its possibility, given a priori. From these we will determine nature as the whole object of all possible experience. I think people will understand me: By this I do not have in mind rules for *observing* a nature that is already given, for these presuppose experience. I do not mean how we can learn the laws from nature (through experience), for then they would not be laws a priori and would give no pure natural science. I mean how the conditions a priori that make experience possible are at the same time the sources from which every universal law of nature has to be derived.

Section 18



§ 18.

So we must first note the following. All judgments of experience are empirical, that is, they have their ground in the immediate perception of the senses. But the reverse does not hold: not every empirical judgment is therefore a judgment of experience. Over and above what is empirical, and over and above whatever is given in sensible intuition, certain special concepts must be added. These have their origin wholly a priori in the pure understanding. Every perception must first be brought under them, and only by their means can it be turned into experience.

*Empirical judgments, so far as they have objective validity, are **judgments of experience**. Those that are *valid only subjectively* I call mere **judgments of perception**. The latter need no pure concept of the understanding, only the logical connecting of perceptions in a thinking subject. The former always require, in addition to the representations of sensible intuition, special *concepts originally produced in the understanding*. These are what make the judgment of experience *objectively valid*.*

At first, all our judgments are mere judgments of perception. They are valid just for us, for our own subject. Only later do we link them to an object, and want them to be valid for us at all times and just as much for everybody else. If a judgment agrees with its object, then all judgments about that same object must agree with one another too. So when we call a judgment of experience

objectively valid, we mean exactly that it is necessarily valid for everyone. The reverse holds as well. Suppose we have reason to regard a judgment as necessarily valid for everyone. (That necessity never comes from perception. It comes from the pure concept of the understanding that the perception is placed under.) Then we must also regard the judgment as objective. It expresses not just how a perception relates to one subject but how the object itself is. For otherwise there would be no reason why other people's judgments should have to agree with mine. They must agree because there is a single object that all of them refer to, one that they all fit, and so they must all fit together with one another.

Section 19



§ 19.

So objective validity and necessary validity for everyone mean the same thing. We do not know the object in itself. Still, when we take a judgment to be valid for everyone, and so necessary, that is precisely what we mean by calling it objective. By means of such a judgment we know the object (even if, as it is in itself, it otherwise stays unknown), because the given perceptions are connected in a way that is valid for everyone and necessary. This is true of every object of the senses. So judgments of experience do not get their objective validity from direct knowledge of the object (which is impossible). They get it only from the condition that empirical judgments must be valid for everyone. As I said, that condition never depends on empirical, or in general sensible, conditions, but on a pure concept belonging to the understanding. The object itself always remains unknown. But once the concept of the understanding determines the connection of the representations that our sensibility gets from it as valid for everyone, the object is determined through that relation, and the judgment is objective.

An illustration. “The room is warm,” “the sugar is sweet,” “wormwood is nasty”^[299-1] are judgments valid only subjectively. I do not demand that I will always find things so, or that everyone else will find them as I do. They express only how two sensations relate to one and the same subject, myself, and only in my current state of perceiving. So they are not meant to hold of the object.

Judgments like these I name judgments of perception. Judgments of experience are an entirely different matter. What experience shows me in certain circumstances, it has to show me always, and show everyone, and it does not stop at the subject, or at the state the subject happens to be in. So I state all such judgments as objectively valid. For instance, if I say that air is elastic, this is at first only a judgment of perception: I am just connecting two sensations in my senses. To make it a judgment of experience, I require this connection to meet a condition that makes it valid for everyone. So I want to be able to say that I, always, and everyone else, must connect the same perception necessarily when the circumstances are the same.

[²⁹⁹-1]: I gladly admit that these examples are not judgments of perception that could ever turn into judgments of experience, even if we added a concept of the understanding to them. They refer only to feeling, which everybody knows to be merely subjective and which must therefore never be attributed to the object. They can never become objective. For the moment I only wanted an example of a judgment valid just subjectively, which has in itself no ground for necessary validity for everyone, and so none for a relation to the object. The next remark gives an example of judgments of perception that turn into judgments of experience when such a concept is added.

Section 20



§ 20.

So we must analyze experience in general, to see what this product of the senses and the understanding contains, and how a judgment of experience can itself come about. At the base lies the intuition of which I am aware, that is, perception (*perceptio*), which belongs to the senses alone. But second, judging also belongs to it (which belongs only to the understanding). This judging can be of two kinds. In the first, I only compare the perceptions and tie them together in a consciousness of my state. In the second, I tie them together in consciousness as such. The first judgment is a mere judgment of perception and has validity only for the subject. It is merely a connecting of perceptions in my state of mind, without relation to the object. So it is not enough for experience, as people commonly imagine, to compare perceptions and link them within one consciousness by judging. That yields no universal validity or necessity of the judgment, and only through these can it be objectively valid and be experience.

So an entirely different judgment must come first, before a perception can turn into experience. The given intuition has to be brought under a concept. This concept determines the form of judging in general with regard to the intuition, connects the empirical consciousness of the intuition in a consciousness in general, and so gives empirical judgments universal validity. A concept of this sort is a pure concept of the understanding a priori. All it does is to determine

for an intuition the way in which it can serve for judging in general. Take the concept of cause as such a concept. It determines the intuition that is brought under it, for example that of air, with regard to judging in general. It makes the concept of air serve, with regard to expansion, as antecedent and consequent in a hypothetical judgment. So the concept of cause is a pure concept of the understanding, entirely different from all possible perception. It serves only to determine the representation contained under it with regard to judging in general, and so to make a universally valid judgment possible.

Now, for a judgment of perception to become a judgment of experience, one thing is required first: the perception must be brought under a concept of the understanding of that kind. Air, for instance, is placed under the concept of cause, which fixes the judgment about air, with regard to its expansion, as hypothetical.^[301-1] By this, the expansion is represented not as belonging merely to my perception of the air in my own state, or in a number of my states, or in the state of perception of others. It is represented as belonging to it *necessarily*. The judgment “Air is elastic” becomes universally valid, and becomes a judgment of experience in the first place, because certain judgments come before it. These bring our intuition of air beneath the concept of cause and effect. By doing so they determine the perceptions not merely in relation to each other in my subject but in regard to the form of judging in general (here the hypothetical form). In this way they make the empirical judgment universally valid.

Take all of our synthetic judgments, so far as they hold objectively, and analyze them. We find that they never consist of mere intuitions that have been connected in a judgment merely by comparison, as people usually think. They would be impossible if a pure concept of the understanding had not been added to the concepts drawn from intuition. Under that pure concept those concepts are brought, and only so are they first linked up within an objectively valid judgment. Even the judgments of pure mathematics, in their simplest axioms, are not exempt from this condition. The principle that the straight line is the shortest connection between two points presupposes that the line is brought under the concept of magnitude. That concept is surely no mere intuition. It has its seat in the understanding alone. It serves to determine the intu-

ition (of the line), with regard to the judgments that may be made of it, as to its quantity, namely plurality (as *iudicia plurativa*).^[302-1] By these is understood that much of the same kind is contained in a given intuition.

^[301-1]: For an example that is easier to see, take this one: when the sun shines on the stone, it gets warm. This judgment is only a judgment of perception and holds no necessity, no matter how often I and others may have observed it. The perceptions are only usually found to go together in this way. But when I say that the sun *warms* the stone, the concept of cause, a concept of the understanding, is added to the perception. It connects the concept of sunshine *necessarily* with that of heat. The synthetic judgment becomes necessary and universally valid, and so objective, and is turned from a perception into experience.

^[302-1]: I would rather have called by this name the judgments that logic calls particular (*particularia*). The latter term already carries the thought that they are not universal. But when I begin from unity (in singular judgments) and advance to totality, I cannot yet mix in any reference to totality. I think only plurality without totality, not the exception from it. That is required if the logical moments are to be placed under the pure concepts of the understanding. In logical use one can leave things as they were.

Section 21



§ 21.

To set out the possibility of experience, so far as it rests on pure concepts of the understanding a priori, we must first set out in one complete table what belongs to judging as such, together with the different moments of the understanding within it. The pure concepts of the understanding are nothing more than concepts of intuitions in general, so far as these are determined in themselves, and so necessarily and universally, for judgments with regard to one or another of these moments. They will turn out exactly parallel to the moments. In this way the principles a priori of the possibility of all experience, as objectively valid empirical knowledge, will also be determined with complete precision. For they are nothing other than statements that bring all perception (in accordance with certain general conditions of intuition) under those pure concepts of the understanding.

Logical Table

of Judgments.

		1.		
	---		---	
		In Quantity		
		General		
		Particular		
		Single		

2. 3.
<i>In Quality</i> <i>In Relation</i>
Affirming Unconditional
Denying Conditional
Unlimited Either-or
4.
<i>In Modality</i>
Possible
Actual
Necessary.

Transcendental Table

of the Concepts of the Understanding.

1.
--- --- ---
<i>In Quantity</i>
Unity (the unit of measure)
Plurality (the size)
Totality (the whole thing)
2. 3.
<i>In Quality</i> <i>In Relation</i>
Reality Substance
Denial Cause
Limiting Interaction
4.
<i>In Modality</i>
Being possible
Being actual
Being necessary.

Pure Physiological Table

of the General Principles of Natural Science.

1.
--- --- ---

	Axioms	
	concerning Intuition	
2.		3.
Anticipations		*Analogies*
concerning Perception		concerning Experience
	4.	
	Postulates	
	for Empirical Thinking	
	Generally.	

Section 21a



§ 21. [a].

To gather everything so far into one concept, I must first remind readers that the subject here is not how experience comes about, but what is contained in it. The first question belongs to empirical psychology, and even in that field it could never be handled properly unless we had the second, which belongs to the critique of knowledge, and above all of the understanding.

Experience has two ingredients: intuitions, which come from sensibility, and judgments, which are purely the understanding's doing. But the judgments that the understanding forms purely out of sensible intuitions are far from being judgments of experience. In the one case, the judgment merely joins perceptions as sensible intuition provides them. In the other, judgments are supposed to say what experience as a whole contains, not what mere perception contains, which is valid for the subject alone. So a judgment of experience has to bring in something beyond the sensible intuition and its logical joining in a judgment (after comparison has made it general). That extra something is what marks the synthetic judgment as necessary, and therefore as valid for all. It can only be a concept that presents the intuition as fixed in itself for one form of judgment rather than another. In other words, it is a concept of the kind of synthetic unity among intuitions that only a given logical function of judgment can represent.

Section 22



§ 22.

Here is the sum of it. The senses' job is to intuit. The understanding's job is to think. Thinking, though, means bringing representations together in one consciousness. This bringing together is either only relative to the subject, in which case it is chance and subjective, or it holds without condition, in which case it is necessary, that is, objective. Judgment is the bringing together of representations in one consciousness. So thinking is the same as judging: relating representations to judgments in general. That means judgments are either purely subjective, when the representations are related to a consciousness in one subject alone and combined in that subject, or objective, when they are combined in consciousness as such, and so necessarily. The logical moments of all judgments are therefore as many possible ways of bringing representations together in a consciousness. If those same moments are used as concepts, they are concepts of the *necessary* bringing together of representations in a consciousness, and so principles of objectively valid judgments. This combination in one consciousness is either analytic, by way of identity, or synthetic, by putting different representations together and adding them to one another. Experience consists in the synthetic linking of appearances (perceptions) in one consciousness, insofar as the linking is necessary. So the pure concepts of the

understanding are the concepts under which all perceptions must first be placed before they can serve in judgments of experience, where the synthetic unity of perceptions appears as necessary and as holding for everyone.^[305-1]

[³⁰⁵-1]: But how does this claim, that judgments of experience must carry necessity in how perceptions are put together, fit with my claim, stressed often above, that experience, as knowledge a posteriori, can give only contingent judgments? If I say that experience teaches me something, all I ever mean is the perception inside it. For instance, that warmth always follows when sunlight falls on a stone. So far, a statement of experience is always contingent. That this warming follows from the sunlight *by necessity* is indeed contained in the judgment of experience (through the concept of cause). But I do not learn that from experience. The opposite is true: experience arises only through adding this concept of the understanding (cause) to perception. How perception comes to take on this addition must be looked up in the Critique, in the section on transcendental judgment, p. 137 ff.

Section 23



§ 23.

Judgments, viewed only as the condition for joining given representations in one consciousness, are rules. When these rules present the joining as necessary, they are rules a priori. When there is nothing above them from which they could be derived, they are principles. Now think of the possibility of all experience, looking only at the form of thinking in it. No conditions of judgments of experience stand above those that place appearances, by the various forms of their intuition, under pure concepts of the understanding. These concepts are what make the empirical judgment objectively valid. So those conditions are the principles a priori of possible experience.

The principles of possible experience are at once universal laws of nature, and these can be known a priori. So the task that our second question here sets, *How is pure natural science possible?*, is solved. Everything a science needs by way of orderly form is fully present here. Logic supplies the formal conditions of all judging, and so of all rules, and none beyond them are possible. They form a logical system. The concepts built on them, which hold the a priori conditions of all synthetic and necessary judgments, form for that reason a transcendental system. And the principles that bring all appearances under these concepts form a physiological system, in other words a system of nature. This system comes before every empirical knowledge of nature and makes it possible in the first place. So it deserves the name of proper universal, pure natural science.

Section 24



§ 24.

The first^[306-1] of these physiological principles puts every appearance, taken as an intuition in space and time, under the concept of *magnitude*. To that extent it is the principle by which mathematics gets applied to experience. The second does not bring the properly empirical element, sensation, which marks the real in intuitions, directly under the concept of *magnitude*. Sensation is not an intuition that *contains* space or time, even though it puts the object that matches it into both. Yet in time there is a difference between reality (the representation of sensation) and zero, the complete emptiness of the intuition, and that difference has a magnitude. Between any given degree of light and darkness, any degree of warmth and utter cold, any degree of heaviness and absolute lightness, or any degree of filled space and fully empty space, one can always think of still smaller degrees. In the same way there are always still smaller degrees between some consciousness and complete unconsciousness (psychological darkness). So no perception could ever prove that something is absolutely lacking. For example, no psychological darkness exists that we could not take as a consciousness merely overpowered by a stronger one. And so it is in every case of sensation. This is why the understanding can even anticipate sensations, which make up the actual quality of empirical representa-

tions (appearances). It does so through the principle that they all have degrees, and so does the real in every appearance. This is the second use of mathematics (*mathesis intensorum*) on natural science.

[³⁰⁶-1]: You will hardly understand these three consecutive sections properly unless you keep beside you what the Critique says on the principles. They can still help you survey the general outline more easily and watch for the main points.

Section 25



§ 25.

Now take the relation of appearances, solely with regard to their existence. Determining this relation is not mathematical but dynamical. It could never be objectively valid, and so be suited to experience, unless it stood under principles a priori that first make knowledge from experience possible on this point. For that reason appearances have to be brought under the concept of substance, which lies under every determination of existence as the concept of the thing itself. Second, where a sequence in time is found among appearances, that is, an event, they must be brought under the concept of an effect with respect to a cause. Third, where being together is to be recognized objectively, that is, through a judgment of experience, they must be brought under the concept of community (reciprocal action). In this way principles a priori underlie objectively valid, though empirical, judgments. That is, they underlie the possibility of experience, in so far as experience is to link objects in nature by their existence. These principles are the actual laws of nature, and they may be called dynamical.

Last, judgments of experience also include knowledge of agreement and connection. This concerns not so much appearances with one another in experience as their relation to experience as a whole. That relation consists either of their agreement with the formal conditions known to the understanding, or their connection with the material of the senses and of perception, or both

gathered in one concept. So it covers possibility, actuality, and necessity as determined by universal laws of nature. That would make up the physiological doctrine of method (the distinction of truth from hypotheses, and the limits of how far the latter can be trusted).

Section 26



§ 26.

The third table, the table of principles, is drawn *from the nature of the understanding itself* by the critical method. It shows a perfection in itself by which it rises far above any other table that has been attempted *from the things themselves* in the dogmatic way, though in vain, or may be attempted in the future. That perfection is that it contains all synthetic principles a priori completely. It has been carried out by one principle, namely the faculty of judging in general, which makes up the essence of experience as regards the understanding. So we can be sure that there are no more principles of this kind. (The dogmatic method can never give this satisfaction.) Yet this is still far from its greatest merit.

We must pay attention to the ground of proof that discovers the possibility of this knowledge a priori. At the same time it limits all principles of this kind to one condition, which must never be overlooked. Otherwise they will be misunderstood and used more widely than the original sense the understanding puts into them allows. The condition is that they contain only the conditions of possible experience in general, so far as it is subject to laws a priori. So I do not say that things *in themselves* have a magnitude, that their reality has a degree, that their existence contains a linking of accidents within a substance, and the like. No one can prove that. Such a synthetic connection from mere concepts is absolutely impossible. On the one hand, all relation to sensible intu-

ition is missing. On the other, all connection of such intuition in a possible experience is missing. So the essential limit on the concepts in these principles is this: all things stand necessarily a priori under the named conditions only *as objects of experience*.

From this follows, second, a specifically distinctive way of proving them. These principles are not related directly to appearances and their relation. They are related to the possibility of experience, of which appearances make up only the matter, not the form. That is, they are related to objectively and universally valid synthetic statements, which is just what distinguishes judgments of experience from mere judgments of perception. This is done as follows. Appearances are mere intuitions *that take up a part of space and time*, and as such they stand under the concept of magnitude. That concept unites their manifold a priori, synthetically, by rules. Next, perception contains, besides intuition, also sensation. Between sensation and zero, that is, its complete disappearance, there is always a passage by diminishing. So the real in appearances must have a degree. That is, the real itself *takes up no part of space or time*,^[309-1] yet the passage to it from empty time or empty space can happen only in time. So sensation, as the quality of empirical intuition, can never be known a priori in what makes it specifically different from other sensations. Even so, in a possible experience in general, it can be told apart intensively, as a magnitude of perception, from any other sensation of the same kind. From this, the application of mathematics to nature, with regard to the sensible intuition by which nature is given to us, is first made possible and determined.

But the reader must be most attentive to the way of proving the principles that go by the name of the analogies of experience. These do not concern, as the principles of applying mathematics to natural science in general do, the production of intuitions. They concern the connection of their existence in one experience. And this can be nothing but the determination of existence in time by necessary laws, under which alone it is objectively valid and so is experience. So the proof does not go to the synthetic unity linking things in themselves, but to that of *perceptions*. And it goes to them not with regard to their content but to the determination of time and to how existence in time is related, by uni-

versal laws. These laws therefore contain the necessity of determining existence in time in general (and so by a rule of the understanding a priori), if an empirical determination in relative time is to have objective validity, and so experience. In Prolegomena I can say no more here than this. A reader may be caught in the long habit of taking experience for a merely empirical composition of perceptions. Such a reader never thinks that experience reaches much further than perceptions do, since it gives empirical judgments universal validity and for this needs a pure unity of the understanding that comes first a priori. To that reader I recommend taking good note of this difference separating experience from a mere heap of perceptions, and judging the way of proving from this point of view.

[³⁰⁹-1]: Heat, light, and the like are equally great in a small space (as to degree) as in a large one. In the same way, inner representations, pain, and consciousness generally are no lower in degree, whether they last briefly or for long. So the magnitude here is as great at a point and in a moment as in any space or time however large. Degrees are therefore greater, but not in intuition. They are greater by mere sensation, or by the size of the ground of an intuition. They can be reckoned as magnitudes only by way of the ratio of 1 to 0. That is, each of them can grow through infinitely many intermediate degrees down to vanishing, or from zero by infinitely many moments of growth up to a definite sensation in a certain time (the magnitude of a quality is its degree).

Section 27



§ 27.

Here is the place to pull *Hume's* doubt out by the root. He was right to say that we cannot see in any way, by reason, how causality is possible. Causality is the relation between the existence of one thing and the existence of something else, which the first necessarily sets up. I would add that we see just as little into the concept of subsistence, that is, the necessity that the existence of things rests on a subject which can itself never be the predicate of another thing. We cannot even form a concept of how such a thing could be possible (although we can point to examples of its use in experience). The same incomprehensibility affects the community of things as well. There is simply no way to see how the state of one thing can yield a conclusion about the state of wholly different things outside it, and the other way round, or how substances, each with its own separate existence, can depend on one another, and do so necessarily. None the less I am a long way from thinking that these concepts are merely taken from experience, or that the necessity they present is invented, a mere semblance created in us by long habit. Rather, I have shown clearly enough that they, and the principles drawn from them, are fixed a priori, ahead of any experience. Their objective correctness is beyond doubt, but of course only for experience.

Section 28



§ 28.

I have not the least concept of how things in themselves might be linked so as to exist as substances, to act as causes, or to stand in community with others (as parts of a real whole). I can even less think such properties in appearances as appearances. Those concepts contain nothing that is in the appearances. They contain only what the understanding alone has to think. Yet we do have such a concept of that kind of linking of representations in our understanding, namely in judgments in general. It runs like this. In one kind of judgment, representations belong as subject to predicates. In another kind they belong as ground to consequence. In a third they belong as parts that together make up one whole possible piece of knowledge. We also know a priori that, unless we take the representation of an object to be determined by one or other of these moments, we could have no knowledge valid of the object. And if we dealt with the object in itself, there could be no sign at all by which I could tell that it is determined by one or other of these moments, that is, that it falls under the concept of substance, or of cause, or (in relation to other substances) of community. For I have no concept of how such a connection of existence could be possible. But what we are asking is not how things in themselves are determined. We are asking how knowledge of things from experience is determined under the named moments of judging in general. In other words, how things as objects of experience can, and must, be placed under those concepts of the

understanding. And there it is clear that I see not only that this is possible, but also that it is necessary: we must put all appearances under these concepts, that is, use them as principles for the possibility of experience.

Section 29



§ 29.

Let us try Hume's problematic concept, his *crux metaphysicorum* (the puzzle that torments metaphysicians): the concept of cause. Logic first gives me, a priori, the form of a conditional judgment in general: one piece of knowledge is used as ground, another as consequence. It can happen, though, that perception shows a rule of relation, saying that a certain appearance is regularly followed by another (but not the reverse). Here I can use the hypothetical judgment and say, for example: if the sun shines on a body long enough, it grows warm. There is, of course, no necessary connection here yet, and so no concept of cause. But I go on: if this statement, which is only a subjective connection of perceptions, is to be a statement of experience, it must be taken as necessary and as valid for everyone. Such a statement would be: the sun, by its light, is the cause of heat. The empirical rule above is now treated as a law. It is no longer held to apply only to appearances. It is held to apply to them for the sake of a possible experience, which needs rules that hold without exception, and therefore necessarily. So I understand quite well that the concept of cause belongs necessarily to the mere form of experience, and how it is possible as a synthetic joining of perceptions in a consciousness in general. What I do not understand at all is how a thing in general could be possible as a cause. The reason is that the concept of cause points to no condition that attaches to things. It points

only to a condition of experience: that experience can be only objectively valid knowledge of appearances and of their order in time, in so far as the earlier can be tied to the later by the rule of hypothetical judgments.

Section 30



§ 30.

So the pure concepts of the understanding have no meaning at all once they leave the objects of experience and try to apply to things in themselves (noumena). They serve only, so to speak, for spelling out appearances so that these can be read as experience. The principles that arise from relating them to the world of sense are useful to our understanding only in experience. Past that, they are arbitrary combinations without objective reality. We cannot know a priori that they are possible, nor confirm by any example that they apply to objects, nor even make that clear, because every example comes from some possible experience. The objects of those concepts therefore cannot be found anywhere but in a possible experience.

Hume's problem has now been fully solved, though the result is the opposite of what its author expected. This solution saves the a priori origin of the pure concepts of the understanding, and the validity of the universal laws of nature as laws of the understanding. But it saves them only by limiting their use to experience, since what makes them possible rests wholly on how the understanding is related to experience. They are not derived from experience. Experience is derived from them. *Hume* never thought of this entirely reversed kind of connection.

From all our inquiries so far, the following result emerges: "All synthetic principles a priori are nothing more than principles of possible experience." They can never be applied to things in themselves, only to appearances as objects of experience. So pure mathematics and pure natural science can reach nothing beyond mere appearances. They represent only what either makes experience possible in general, or what, since it is derived from these principles, must always be representable in some possible experience.

Section 31



§ 31.

So now, for once, we have something definite to hold on to in all metaphysical undertakings, which until now have been bold enough but have rushed blindly at everything without distinction. Dogmatic thinkers never imagined the goal of their efforts could be set so close. Nor did those who, defiant in their supposed sound reason, set out with concepts and principles of pure reason that were legitimate and natural but meant only for use in experience. They went after insights for which they knew no definite limits, and could not know any, because they had never thought about the nature or the possibility of such a pure understanding, and could not.

Many a naturalist of pure reason (by which I mean someone who feels able to settle questions of metaphysics with no science at all) might claim this: that what has been laid out here with such elaborate preparation, or, if he likes, with long-winded pedantic show, he has long known and understood, through the soothsaying spirit of his sound reason, and not just guessed: “that with all our reason we can never get beyond the field of experiences.” But if we gradually question him about his principles of reason, he has to admit that many of them were not taken from experience, and so are independent of it and valid a priori. How and on what grounds, then, will he hold in check the dogmatist, who uses those concepts and principles beyond all possible experience, precisely because they are known independently of experience? Even this adept of sound reason,

for all his borrowed, cheaply won wisdom, is not safe from slipping unnoticed beyond objects of experience into the land of fancies. Indeed, he is usually deep in it already, even if everyday speech, in which he calls everything probability, reasonable guess, or analogy, lends his baseless claims some polish.

Section 32



§ 32.

Since the earliest days of philosophy, inquirers into pure reason have imagined, besides the beings of sense or appearances (phenomena) that make up the world of sense, special beings of the understanding (noumena), which were meant to form a world of the understanding. They took appearance and illusion to be one and the same (an age that had not yet matured can be forgiven for that), and so they granted reality only to the beings of the understanding.

In truth, when we treat the objects of the senses, quite properly, as mere appearances, we at the same time grant that a thing in itself lies at their basis, even though we do not know how that thing is constituted. We know only its appearance, which is the way our senses are affected by this unknown something. By accepting appearances, then, the understanding also grants that things in themselves exist. And so we may say that the idea of such beings, which lie beneath the appearances and are thus mere beings of the understanding, is not only allowed but cannot be avoided.

Our critical deduction does not shut out things of this kind (noumena) at all. It rather restricts the principles of the Aesthetic, so that they do not reach out to everything, which would turn everything into mere appearance. They are to hold only for objects of possible experience. So beings of the understanding are let in, yet with a rule pressed on us that tolerates no exception: we know nothing determinate about these pure beings of the understanding, and can-

not, because our pure concepts of the understanding and our pure intuitions apply only to objects of possible experience, and so to beings of sense alone. Once we leave these behind, those concepts keep no meaning whatever.

Section 33



§ 33.

Our pure concepts of the understanding have something tricky about them, in how they tempt us toward a transcendent use. I call a use transcendent when it goes beyond all possible experience. Our concepts of substance, force, action, reality, and the like are wholly independent of experience and hold no appearance of the senses, so they seem to apply to things in themselves (noumena). There is more to strengthen the suspicion: they carry a necessity of determination that experience never matches. The concept of cause contains a rule by which one state follows another necessarily. Experience, though, can show us only that one state of things often follows another, or at best usually does. So it can give us neither strict universality nor necessity, and so on.

Because of this, concepts of the understanding seem to have much more meaning and content than use in experience alone could exhaust. And so the understanding, without noticing, builds on to the house of experience a far larger annex, which it fills with nothing but beings of thought. It never notices that it has strayed, with its otherwise sound concepts, beyond the limits of their proper use.

Section 34



§ 34.

Two important and entirely indispensable, if extremely dry, investigations were therefore needed. They were carried out in the Critique at p. 137 ff. and p. 235 ff. The first showed that the senses do not provide the pure concepts of the understanding in the concrete. They provide only the schema for using them, and the object that fits the schema is found only in experience (the understanding's product, made from materials of sensibility). The second investigation (Critique, p. 235) shows this. Our pure concepts and principles of the understanding are independent of experience, and their reach even seems wider. Yet beyond the field of experience they cannot be used to think anything at all, since all they can do is fix the logical form of judgment for given intuitions. But beyond the field of sensibility there is no intuition whatever, so those pure concepts lack meaning altogether, since they cannot be presented in the concrete in any way. All noumena, together with the whole they form, an intelligible^[316-1] world, are thus only representations of a problem. Its object may well be possible in itself, but our understanding makes any solution of it impossible. Our understanding is not a faculty of intuition. It is only a faculty of joining given intuitions in an experience. Experience must therefore hold all the objects for our concepts, and outside it all concepts will be empty of meaning, because no intuition can be placed under them.

[³¹⁶-1]: Not (as people usually put it) an *intellectual* world. *Intellectual* kinds of *knowledge* are those gained through the understanding, and such knowledge also applies to our world of sense. *Intelligible* is what we call *objects* that can be represented *only through the understanding*, and none of our sensible intuitions can reach them. Yet some possible intuition must correspond to every object. So we would have to imagine an understanding that intuits things directly. Yet we have no concept at all of such an understanding, and so none of the *beings of the understanding* to which it is supposed to apply.

Section 35



§ 35.

We may perhaps forgive the imagination if it sometimes runs wild, that is, if it does not carefully stay within the limits of experience. At least such free flight brings it to life and strengthens it, and it is always easier to rein in its boldness than to rouse it from sluggishness. The understanding, on the other hand, is supposed to *think*, and it can never be forgiven if it *runs wild* instead. All our help in setting limits to the imagination's wild flights, where that is needed, depends on the understanding alone.

It starts out, though, very innocently and modestly. First it sets in order the elementary pieces of knowledge that it carries within it before all experience but which must always find use in experience. Little by little it drops those limits. And what could stop it, since the understanding has drawn its principles freely out of itself? Now it moves first to newly invented forces in nature, and soon to beings outside nature, in a word, to a whole world, for whose construction we never run short of building material. Fertile invention supplies plenty, and experience never confirms it, but never refutes it either. This also explains why young thinkers love metaphysics when it is genuinely dogmatic, and often give up to it their time and their otherwise useful gifts.

It does no good at all to try to moderate such fruitless attempts of pure reason with all sorts of reminders: that these hidden questions are hard to solve, that our reason has limits, that its claims should be cut down to mere guesses.

As long as the *impossibility* of these attempts has not been clearly shown, and as long as reason's *self-knowledge* does not become true science, one that marks off the field of its right use from the field of its empty and fruitless use with something like geometric certainty, such vain efforts will never be stopped completely.

Section 36



§ 36.

How Is Nature Itself Possible?

This question is the highest point transcendental philosophy can ever touch. Philosophy must be led to it as its boundary and completion. It really contains two questions.

First: How is nature possible in the *material* sense, that is, according to intuition, as the sum of appearances? How are space, time, and what fills them, the object of sensation, possible at all? The answer is: by the constitution of our sensibility. Through it, sensibility is touched in its own way by objects that remain unknown to it as they are in themselves and that are altogether different from those appearances. This answer is supplied in the book itself under the heading of the transcendental Aesthetic, and in these Prolegomena by the solution of the first main question.

Second: How is nature possible when taken formally, as the sum of the rules to which every appearance must be subject if appearances are to be thought of as linked within one experience? The only possible answer is this: nature is possible only by the constitution of our understanding. By this constitution all those representations of sensibility are necessarily related to one consciousness. Through it alone our own kind of thinking is possible, namely thinking by rules, and by means of these, experience is possible. Experience

must be entirely distinguished from insight into objects in themselves. This answer is supplied in the book itself in the transcendental Logic, and in these Prolegomena while the second main question is being solved.

But how this peculiar feature of our sensibility itself can exist, or likewise that of our understanding and of the necessary apperception that underlies it and all thinking, cannot be solved or answered further. We need these again and again for every answer and for all thinking of objects.

Many laws of nature can be known only through experience. But lawfulness in the way appearances are connected, in other words nature as such, we cannot come to know through any experience. For experience itself needs such laws, which lie a priori at the base of its possibility.

So the possibility of experience in general is also the universal law of nature, with the principles of the one are themselves the laws of the other. We know nature only as the sum of appearances, that is, of representations in us. So we can take the law of their connection from nowhere else than from the principles of their connection in us, that is, the conditions of the necessary uniting in one consciousness, which makes up the possibility of experience.

Even the main thesis carried through this whole section, that universal laws of nature can be known a priori, leads of itself to the following. The highest legislation of nature must lie in ourselves, that is, in our understanding. We must not take the universal laws of nature from nature by means of experience. We must do the reverse and seek nature, as to its universal lawfulness, merely from the conditions of the possibility of experience that lie in our sensibility and understanding. In what other way could we know these laws a priori, given that they are no rules of analytic knowledge but true synthetic extensions of it? Such a necessary agreement of the principles of possible experience with the laws of the possibility of nature can come about only from one of two causes. Either these laws are borrowed from nature by means of experience. Or, the reverse, nature is derived from the laws that make experience possible at all, and is entirely the same as the mere universal lawfulness of the latter. The first con-

tradicts itself. The universal laws of nature can and must be known a priori (that is, independently of all experience) and be placed at the base of all empirical use of the understanding. So only the second remains.^[319-1]

We must, however, distinguish the empirical laws of nature from the pure or universal laws of nature. Empirical laws always presuppose particular perceptions. Pure or universal laws have no particular perceptions at their base and contain only the conditions of the necessary uniting of perceptions in one experience. As for the latter, nature and possible experience are entirely the same. Here the lawfulness depends on the necessary linking of appearances in one experience (without which we could know no object of the world of sense at all), and so on the original laws of the understanding. So it sounds strange at first, but is nonetheless certain, when I say of these laws: *the understanding takes its laws (a priori) not from nature, but dictates them to nature.*

^[319-1]: Only *Crusius* knew a middle way: that a spirit that can neither err nor deceive implanted these laws of nature in us originally. But deceptive principles often mix in too, and the system of this very man offers not a few examples. Without secure criteria for telling the genuine origin from the false, the use of such a principle looks very risky, because one can never know for sure whether it was the spirit of truth or the father of lies who put it into us.

Section 37



§ 37.

We will explain this seemingly bold claim with an example. It is to show that the laws we discover in objects of sensible intuition, especially those we recognize as necessary, are already seen by us as laws that the understanding has put there. In every other respect they are exactly like the laws of nature that we credit to experience.

Section 38



§ 38.

Consider the properties of the circle. By them this figure unites at once, in one general rule, many arbitrary determinations of space within it. We cannot avoid crediting this geometrical thing with a nature. Take two lines that cut each other and also cut the circle. However they happen to be drawn, they are always divided so regularly that the rectangle formed by the segments of one line equals that formed by the segments of the other. So I ask: “Is this law located in the circle, or in the understanding?” That is, does the figure contain the ground of this law in itself, independently of the understanding? Or does the understanding, having itself constructed the figure by its concepts (namely the equality of the radii), put into it at the same time the law of chords cutting each other in geometric proportion? As we follow the proofs of this law, we soon notice that it can be derived only from the condition that the understanding laid at the base of the construction of this figure, namely the equality of the radii. Let us now extend this concept, to follow still further the unity of manifold properties of geometrical figures under common laws. Let us consider the circle as a conic section, which thus stands with other conic sections under the very same basic conditions of construction. We then find that all chords cutting each other inside these others, the ellipse, the parabola, and the hyperbola, always do it in such a way that the rectangles made by their parts are not equal but still always stand in equal proportions to each other. If we go further still,

to the basic teachings of physical astronomy, a physical law of mutual attraction shows itself, spread over the whole of material nature. Its rule is that attraction decreases with the square of the distance from each attracting point, in the same way that the spherical surfaces across which this force spreads grow. That appears to be rooted necessarily in the nature of things themselves, and so it is commonly presented as knowable a priori. The sources of this law are simple, since they rest merely on the ratio of spherical surfaces of different radii. Yet its consequence is so excellent in the variety of its agreements and their regularity that not only do all possible orbits of the heavenly bodies come out as conic sections. Their relation to one another also comes out such that no other law of attraction than that of the inverse square of distances could be thought up as fit for a world system.

Here, then, we have a nature that rests on laws which the understanding knows a priori, mainly from general principles for determining space. Again I ask: are these laws of nature in space, and does the understanding learn them just by trying to explore the rich meaning that lies in space? Or are they in the understanding, and in the manner in which it determines space by the conditions of synthetic unity, in which all its concepts end up? Space is something so uniform, and so undetermined in all particular properties, that we will certainly not look in it for a treasure of laws of nature. By contrast, what determines space to the shape of the circle, the figure of the cone and the sphere is the understanding, in so far as it holds the basis for the unity of how they are constructed. The mere general form of intuition, called space, is indeed the substratum of all intuitions that can be determined as particular objects. And in space lies the condition of the possibility and variety of these intuitions. But the unity of the objects is fixed by the understanding alone, by conditions rooted in its own nature. So the understanding is the origin of the general order of nature, since it takes all appearances under its own laws. In this way it brings about experience (as to its form) a priori. Because of that, everything that is to be known only through experience is necessarily subject to its laws. For we are not dealing with the nature of *things in themselves*, which does not depend on the conditions of both our sensibility and the understanding. We are dealing

with nature as an object of possible experience. And there the understanding, in making experience possible, also sees to it that the world of sense is either not an object of experience at all or is a nature.

Section 39



§ 39.

Appendix

to Pure Natural Science.

On the System of the Categories.

Nothing could please a philosopher more than being able to derive from one principle a priori the manifold of concepts or principles that had earlier appeared scattered, through the use he had made of them in the concrete, and so to unite everything in one body of knowledge. Before, he believed only that what was left to him once he had abstracted in a certain way, and which seemed by comparison to form a special kind of knowledge, had been completely collected. What he had was merely an *aggregate*. Now he is aware that just this many, no more and no fewer, can make up that kind of knowledge. He saw the necessity of his division, which is real comprehension, and now for the first time he has a *system*.

To pick out of ordinary knowledge the concepts that have no particular experience at their base and yet occur in all knowledge from experience, forming as it were its mere form of connection, took no more thought or insight than to pick out of a language the rules for the actual use of words in general, and so to gather elements for a grammar. (In fact the two investigations are

closely related.) Yet one still cannot give the reason why each language has just this formal character and no other. Still less can one say why just this many such formal determinations of it, no more and no fewer, can be found at all.

Aristotle had gathered ten pure basic concepts of this sort, which he called categories.^[323-1] These were also called predicaments. He later found himself compelled to add five post-predicaments to them,^[323-2] a few of which already lie within the first ten (for example before, together, motion). But this rhapsody could count more as a hint for a future researcher than as an idea carried out in an orderly way, and deserve approval. So, as philosophy grew more enlightened, it was rejected as quite useless.

I investigated the pure elements of human knowledge (those containing nothing empirical). Only after long reflection did I succeed at reliably telling apart the pure basic concepts of sensibility (space and time) from the concepts of the understanding, and setting them off from each other. Because of this, the 7th, 8th, and 9th categories were struck from that list. The rest were of no use to me, as there was no principle with which the understanding could be completely marked out, and every one of its functions, the source of its pure concepts, determined completely and precisely.

To find such a principle, I searched for one act of the understanding that includes all the rest and varies only in various modifications or moments, namely placing the manifold of representation under the unity of thought as such. That act, I found, is judging. Here the work of the logicians already lay before me, finished, though not yet quite free of defects. With its help I was able to set out a full table of the pure functions of the understanding, functions that were undetermined in regard to any object. Finally I related these functions of judging to objects as such, or more exactly to the condition under which judgments are determined as objectively valid. Pure concepts of the understanding arose, and I could be beyond doubt that just these, and just this many, no more and no fewer, can make up our whole knowledge of things from the understanding alone. I called them, as was fitting, by their old name, *categories*. I reserved the right to add completely all concepts derivable from them under the name of *predicables*, once a system of transcendental philoso-

phy was to be produced. For its sake I was then concerned only with the Critique of reason itself. The predicables would arise by connecting the categories with one another, or with appearance's pure form (space and time), or with appearance's matter so far as it has not yet been determined empirically (the object of sensation as such).

What is essential in this system of categories, and sets it apart from that old rhapsody that went on without any principle, and why it alone deserves to count as philosophy, is this. By means of it, it became possible to fix exactly what the pure concepts of the understanding truly mean and under what condition they may be used. It turned out that in themselves they are nothing but logical functions. As such they do not form the slightest concept of an object in itself. They need sensible intuition to be at their base. They then serve only to determine, with regard to those functions, empirical judgments that would otherwise be undetermined and indifferent regarding all functions of judging. In that way they give such judgments universal validity, and by their means make *judgments of experience* in general possible.

Neither the first author of the categories nor anyone after him thought of such an insight into their nature, which also limited them to use in experience. But without this insight (which depends entirely on their derivation or deduction), they are quite useless. They are a wretched list of names, with no explanation or rule for their use. Suppose the ancients had ever had such a thing in mind. Then without doubt the whole study of pure rational knowledge, which under the name of metaphysics has spoiled so many good minds for many centuries, would have come down to us in an entirely different shape. It would have enlightened human understanding, instead of exhausting it, as actually happened, in gloomy and vain brooding and making it unfit for true science.

This system of the categories now makes the treatment of every object of pure reason itself systematic in turn. It provides an undoubted instruction or guiding thread: it shows how, and through which points of inquiry, every metaphysical consideration must be led if it is to be complete, since it uses up all moments of the understanding, under which every other concept must be brought. The table of principles arose in the same way, and we can be sure of its

completeness only through the system of the categories. Even in the division of concepts that are to go beyond the physiological use of the understanding (use concerning nature) (Critique, p. 344, and likewise p. 415), the same guiding thread is always at work. It must always be led through the same fixed points determined a priori in human understanding. So it always forms a closed circle, which leaves no doubt that the object of any pure concept of the understanding or of reason can be fully known in this way, so far as it is to be considered philosophically and by principles a priori. I could not even refrain from using this guidance for one of the most abstract divisions in ontology, the many-sided distinction of the concepts of something and nothing, and from producing by it a regular and necessary table (Critique, p. 292).^[325-1]

This same system shows its use, which cannot be praised enough, as does every true system founded on a general principle. It excludes all alien concepts that might otherwise creep in among those pure concepts of the understanding, and it assigns each piece of knowledge its place. I had likewise arranged in a table, by the guiding thread of the categories, certain concepts that I called *concepts of reflection*. In ontology they mix themselves among the pure concepts of the understanding, without permission or rightful claim. Yet the pure concepts of the understanding are concepts of connection, and so of the object itself. The concepts of reflection are only for comparing concepts that are already given, and so have a quite different nature and use. My lawful division (Critique, p. 260) separates them from this jumble. The use of that separate table of the categories shines out far more clearly when we separate from them, as will be done right now, the table of transcendental concepts of reason. These are of quite a different nature and origin from those concepts of the understanding (and so must have a different form). Yet this necessary separation has never been made in any system of metaphysics. There, those ideas of reason run through the concepts of the understanding without distinction, as if they belonged together like siblings in one family. Without a special system of the categories, this mixing-up could never be avoided.

[³²³-1]: 1. Substance. 2. Quality. 3. Quantity. 4. Relation. 5. Action. 6. Passion (being acted upon). 7. When. 8. Where. 9. Position. 10. State (having).

[³²³-2]: Opposite, Before, Together, Motion, Having.

[³²⁵-1]: Many neat remarks can be made on a table of the categories laid out like this. Examples: 1) The third arises from the first and second joined in one concept. 2) In those of magnitude and quality there is only a progress from unity to totality, or from something to nothing (for this purpose the categories of quality must stand thus: reality, limitation, complete negation), without correlates or opposites. The categories of relation and modality, by contrast, carry the latter with them. 3) Just as in *logic* categorical judgments underlie all others, so the category of substance underlies every concept of actual things. 4) Just as modality in judgment is no particular predicate, so the modal concepts add no determination to things, and so on. All such reflections have great use. Suppose you also list all *predicables*, which one can take, fairly completely, from any sound ontology (for example *Baumgarten's*), and arrange them by class under the categories. Do not fail to add as complete a breakdown of all these concepts as possible. Then a merely analytic part of metaphysics will arise, which contains no synthetic statement yet and could come before the second (synthetic) part. By its definiteness and completeness it would be not only useful but, through the systematic character in it, would also have a certain beauty.

Third part: How is metaphysics in general possible?



The Main Transcendental Question

Part Three.

How Can There Be Any Metaphysics at All?

Section 40



§ 40.

Pure mathematics and pure natural science would not have needed, *for their own security* and certainty, a deduction like the one we have worked out for both. The first rests on its own self-evidence. The second, although it arose from pure sources in the understanding, still rests on experience and its thoroughgoing confirmation. It cannot wholly reject or do without this testimony, because with all its certainty it can never equal mathematics as philosophy. So both sciences needed the investigation just described, not for themselves but for another science, namely metaphysics.

Alongside concepts of nature, which are always applied in experience, metaphysics also has to do with pure concepts of reason. These are never given in any possible experience. So it deals with concepts whose objective reality (that they are not mere fancies) and with assertions whose truth or falsity can be neither confirmed nor exposed by any experience. This part of metaphysics is, moreover, exactly the one that makes up its essential aim, for which everything else is only a means. So this science needs such a deduction (justification) *for its own sake*. The third question now put to us thus concerns, as it were, the core and the distinctive feature of metaphysics. It is the occupation of reason merely with itself. Brooding over its own concepts, reason supposedly gets acquainted with objects directly from them. It needs no help from experience for this, and could not reach it through experience at all.^[327-1]

Without a solution of this question, reason is never content with itself. The use in experience, to which reason limits the pure understanding, does not fulfill reason's whole vocation. Each single experience is just one part of the entire sphere of its domain. But the *absolute whole of all possible experience* is itself no experience, and yet it is a necessary problem for reason. To merely picture it, reason requires concepts of a very different sort than those pure concepts of the understanding. Their use is only immanent, that is, it goes to experience so far as it is given. Concepts of reason, on the other hand, aim at completeness, meaning the unity of all possible experience. In this way they go beyond every given experience and become *transcendent*.

So just as the understanding needed the categories for experience, reason contains in itself the ground of ideas. By ideas By that I mean necessary concepts whose object, all the same, *cannot* be given in any experience at all. The ideas lie in the nature of reason just as the categories lie in the nature of the understanding. If the ideas bring along an illusion that can easily lead us astray, that illusion cannot be avoided, though it can quite well be prevented "from misleading us."

Every illusion comes down to taking the subjective ground of a judgment for objective. So self-knowledge of pure reason in its transcendent (overreaching) use will be the only safeguard against the errors that reason falls into when it misreads its vocation. That is, when it relates to the object in itself, in a transcendent way, what concerns only its own subject and its guidance in all immanent use.

[³²⁷-1]: Suppose we can say that a science is actual, at least in the idea of all people, as soon as it is settled that the problems leading to it are put to everyone by the nature of human reason. Many attempts on them are then always inevitable, though faulty. In that case we must also say that metaphysics is *subjectively* actual (and indeed necessarily so). So we are right to ask how it is possible *objectively*.

Section 41



§ 41.

Telling *ideas*, the pure concepts of reason, apart from the categories or pure concepts of the understanding is an extremely important step in laying the foundations of a science that is to contain the system of all this knowledge a priori. These are kinds of knowledge of entirely different kind, origin, and use. Without this separation, metaphysics is flatly impossible, or at best an unruly, clumsy attempt to stick a house of cards together, without any knowledge of the materials one is handling or of what they can be used for. If the Critique of Pure Reason had done nothing but bring this difference before our eyes, it would already have done more to clear up our concepts and to guide inquiry in metaphysics than all the fruitless efforts, made since ancient times, to satisfy the transcendent problems of pure reason. Nobody ever suspected that they stood in a quite different field from that of the understanding, so they named concepts of the understanding and of reason in the same breath, as if they were one kind.

Section 42



§ 42.

All pure knowledge of the understanding has this feature: its concepts can be given in experience, and its principles can be confirmed by experience. Transcendent knowledge of reason is different. As for its *ideas*, they cannot be given in experience. Its statements can be neither confirmed nor refuted by experience. So any error that may creep in can be exposed by nothing but pure reason itself. That is very hard, because this very reason, by means of its ideas, naturally becomes dialectical. This unavoidable illusion cannot be held in check by any objective and dogmatic investigation of things. It can be held in check only by a subjective investigation of reason itself as a source of ideas.

Section 43



§ 43.

In the Critique my chief aim was always the following. I wanted not only to distinguish the kinds of knowledge carefully, but also to derive from their common source all the concepts belonging to each. Knowing where they come from, I could then determine their use with certainty. And I would also have the advantage, never suspected before but invaluable, of recognizing by principles the completeness in listing, classifying, and specifying the concepts a priori. Without this, everything in metaphysics is mere rhapsody, where you can never tell whether what you hold is enough, or whether, and where, something is still lacking. Of course, one can have this advantage only in pure philosophy. But in pure philosophy it makes up the very essence.

I had traced the categories back to the four logical functions of all the judgments of the understanding. So it was quite natural to look for the origin of the ideas in the three functions of inferences of reason. If there are such pure concepts of reason at all (transcendental ideas), they could be found nowhere else than in that same act of reason, unless one holds them to be innate. As far as it concerns only form, that act is the logical side of inferences of reason. But as far as it presents the understanding's judgments as fixed a priori in respect of one form or another, it makes up transcendental concepts of pure reason.

The formal difference among inferences of reason makes it necessary to divide them into categorical, hypothetical, and disjunctive ones. The concepts of reason that rest on this contain, first, the idea of the complete subject (the substantial). Second, they contain the idea of the complete series of conditions. Third, they contain the determining of all concepts within the idea of a complete sum of the possible.^[330-1] Of these ideas, the first was psychological, the second cosmological, the third theological. All three give occasion to a dialectic, each in its own way. On this was based the splitting of the entire dialectic of pure reason into the paralogism, the antinomy, and finally its ideal. This derivation makes us completely sure that every claim of pure reason is set out here in full, and not a single one can be missing. For the faculty of reason itself, from which they all take their origin, is thereby entirely measured out.

^[330-1]: In a disjunctive judgment we regard *all possibility* as divided with respect to some given concept. The ontological principle that a thing must be thoroughly determined in general (of all possible opposite predicates, one belongs to each thing) is at the same time the principle of all disjunctive judgments. It lays at its base the sum of all possibility, in which the possibility of each thing in general is regarded as determinable. This serves as a small illustration of the statement above: in form, the act of reason in disjunctive inferences is the same as the act by which it produces the idea of a sum of all reality, which contains the positive side of all opposed predicates.

Section 44



§ 44.

It is also remarkable, in this general view, that the ideas of reason are not useful to us at all in the way the categories are useful for using the understanding on experience. With regard to experience they are entirely dispensable, and even opposed to the maxims of rational knowledge of nature and a hindrance to them. Nonetheless they are necessary for another purpose, still to be determined. Whether the soul is a simple substance or not may be a matter of complete indifference for explaining its appearances. We cannot make the concept of a simple being understandable by any possible experience, in a sensible way, and so in the concrete. So the concept is entirely empty when it comes to any insight we might hope for into what causes appearances. It can serve as no principle for accounting for what inner or outer experience offers. Likewise the cosmological ideas of the beginning of the world or its eternity (looking backward) are no use for explaining any event in the world itself. Finally, by a correct maxim of natural philosophy, we must refrain from all explanation of the arrangement of nature that is drawn from the will of a highest being. That is no longer natural philosophy but a confession that we have come to the end of it. So these ideas have a quite different vocation for their use from those categories, through which, and through the principles built on them, experience itself was first made possible. Yet suppose our aim were directed at nothing but knowledge of nature as it can be given in experience. Then the hard work of our ana-

lytic of the understanding would also be quite superfluous. For reason does its work in mathematics as well as in natural science quite securely and well, even without all this subtle deduction. So our critique of the understanding unites with the ideas of pure reason in a purpose set beyond the use of the understanding in experience. Yet we said above that, in this respect, such use of the understanding is quite impossible and without object or meaning. But there still has to be harmony between what is in the make-up of reason and what is part of that of the understanding. The first must contribute to the perfection of the second, and cannot possibly confuse it.

The solution of this question is as follows. Among its ideas, pure reason does not have particular objects in view that would lie outside the field of experience. It only demands completeness of the use of the understanding in the context of experience. This completeness, though, can be completeness only of principles, and not of intuitions or of objects. Still, to represent those principles definitely, reason thinks of them as the knowledge of an object whose knowledge is completely determined with regard to those rules. This object is only an idea. Its purpose is to bring the understanding's knowledge as near as possible to the completeness that the idea indicates.

Section 45



§ 45.

Preliminary Remark

on the Dialectic of Pure Reason.

Above, in sections 33 and 34, we showed the following. The purity of the categories from every admixture of sensible determinations can mislead reason into stretching their use far past all experience and onto things in themselves. But reason can find no intuition that would give them meaning and sense once made concrete. As mere logical functions, they can represent a thing in general, but by themselves cannot give a definite concept of any thing. Objects of this exaggerated kind are those called *noumena* or pure beings of the understanding (better, beings of thought). Examples are *substance* that is thought *without persistence in time*, or a *cause* that would not act *in time*, and so on. Such objects are given predicates that serve only to make the lawfulness of experience possible. Yet at the same time all conditions of intuition, under which alone experience is possible, are taken away from them. By that, those concepts lose all meaning again.

There is no danger, however, that the understanding will, of itself, without being pushed by foreign laws, wander so wantonly beyond its limits into the field of mere beings of thought. But reason can never be fully satisfied with any use of the rules of the understanding in experience, since that use is always still conditioned. So reason demands the completion of this chain of conditions.

Then the understanding is driven out of its circle. In part, it is driven to represent objects of experience in a series stretching so far that no experience can grasp it. In part, to complete the series, it is driven to look for *noumena* altogether outside experience, to which it can attach the chain. In this way it could at last become independent of conditions of experience, and still make its hold complete. These are the transcendental ideas. They may be designed, in line with the true but hidden purpose of our reason's natural determination, not for overreaching concepts but only for unlimited extension of the use of experience. Even so, by an unavoidable illusion, they lure the understanding into a *transcendent* use. This use is deceptive. It cannot be kept within bounds by any resolve to stay inside the limits of experience, but only by scientific instruction and with effort.

Section 46



§ 46.

I. *Psychological Ideas*. (Critique, p. 341 ff.)

People have long observed that in every substance the actual subject is unknown to us. This is what remains after all accidents (as predicates) have been set aside, and so the *substantial* itself. People have often complained about this limit to our insight. But we should note well that human understanding is not to be blamed for not knowing the substantial of things, in other words for being unable to fix it by itself. It is rather to be blamed for demanding to know it as determinately as if it were a given object, when it is a mere idea. Pure reason asks that, for each predicate of a thing, we look for the subject belonging to it. For this subject, which must in turn be only a predicate, we look for its subject, and so on to infinity (or as far as we can reach). But from this it follows that we should hold nothing we can reach to be an ultimate subject. It also follows that our understanding, however deeply it digs, can never think the substantial itself, even if all nature were laid open to it. The specific nature of our understanding is to think everything discursively, that is, through concepts, and so through nothing but predicates. For this, the absolute subject must always be missing. So all real properties by which we know bodies are mere accidents, even impenetrability. This can only ever be represented as the effect of a force, for which we lack the subject.

Now it seems that in the consciousness of ourselves (the thinking subject) we do have this substantial, and in a direct intuition at that. For all predicates of the inner sense relate to the I as subject, and this cannot be thought further as a predicate of any other subject. So it seems that here the completeness in relating the given concepts as predicates to a subject is not merely an idea. It seems that the object, the *absolute subject* itself, is given in experience. But this expectation is disappointed. The I is no concept at all,^[334-1] but merely a label for the object of the inner sense, so far as we know it by no further predicate. So in itself it cannot be a predicate of another thing. But equally it cannot be a definite concept of an absolute subject. It is only, as in all other cases, the relation of inner appearances to their unknown subject. Even so, this idea gives rise, through a quite natural misunderstanding, to a very plausible argument. (The idea itself serves well as a regulative principle for completely destroying all materialist explanations of the inner appearances of our soul.)^[334-1] The argument is meant to infer, from this supposed knowledge of the substantial in our thinking being, its nature, even though the knowledge of that nature falls entirely outside the sum of experience.

^[334-1]: Suppose the representation of apperception, the I, were a concept by which anything is thought, then it could serve as a predicate of other things too, or hold such predicates in itself. In fact it is only the feeling of existing, without even the faintest concept. It merely represents that to which all thinking is related (*relatione accidentis*).

Section 47



§ 47.

This thinking self (the soul) may be called substance, as the last subject of thinking, which cannot be represented further as a predicate of another thing. Even so, this concept remains entirely empty and without consequences, unless persistence can be proved of it. Persistence is what makes the concept of substances fruitful in experience.

The concept of a substance as a thing in itself can never prove persistence. Persistence can be proved only for the sake of experience. This was shown sufficiently in the first analogy of experience (*Critique*, p. 182). If you do not want to give in to this proof, you need only try yourself whether you can succeed in proving, from the concept of a subject that is never itself the predicate of another thing, that its existence is persistent throughout. You would have to prove that it can neither come into being nor pass away, either by itself or by any natural cause. Synthetic statements a priori of this kind can never be proved in themselves. The only proof possible concerns things as objects of a possible experience.

Section 48



§ 48.

Suppose we want to infer the persistence of the soul from the concept of the soul as substance. This can hold of the soul only for the sake of possible experience. It cannot hold of the soul as a thing in itself, beyond all possible experience. Now the subjective condition that all our possible experience requires is life. So we can infer only the persistence of the soul in life. For a person's death is the end of all experience, as far as the soul as an object of experience is concerned. That holds unless the opposite is shown, which is exactly the question. So the persistence of the soul can be shown only in a person's life (and that proof we will gladly be spared), but not after death (which is what we really care about). The general reason is this: the concept of substance, when it must be thought of as tied necessarily to the concept of persistence, can be so only by a principle of possible experience, and so only for the sake of experience.^[335-1]

^[335-1]: It is truly remarkable how carelessly metaphysicians have always slipped past the principle of the persistence of substances, without ever attempting a proof of it. No doubt the reason is that, as soon as they started with the concept of substance, they found all proofs failed them. Common sense knew well that without this assumption no uniting of perceptions in an experience is possible. It made up for the lack by a postulate. It could never draw this principle from experience itself. In part, experience cannot follow

matters (substances) through each of their changes and dissolutions far enough to find the material always undiminished. In part, the principle carries *necessity* with it, and necessity is always the mark of a principle a priori. Now metaphysicians applied this principle confidently to the concept of the soul as a *substance*, and inferred a necessary continuation of it after a person's death. (They were helped above all by the simplicity of this substance, which was inferred from the indivisibility of consciousness, and which secured it from perishing by dissolution.) If they had found the real source of this principle (which would have taken much deeper investigations than they ever felt like beginning), they would have seen the following. That law of the persistence of substances holds only for the sake of experience. So it holds only of things so far as they are to be known in experience and connected with others. It can never hold of them regardless of all possible experience, and so not of the soul after death.

Section 49



§ 49.

That something real outside us not only corresponds to our outer perceptions but must correspond to them cannot, either, be proved as a connection among things in themselves. Proof is possible for the sake of experience. What that amounts to is the following. That something exists in an empirical way, and so as an appearance in space outside us, can quite well be proved. We have to do only with objects that belong to a possible experience, for the very reason that other objects can be given to us in no experience at all, and so are nothing to us. Whatever is intuited in space is empirically outside of me. Space, with all the appearances it contains, belongs to the representations whose connection according to the laws of experience proves their objective truth. In the same way, the connection of appearances of the inner sense proves the reality of my soul (as an object of the inner sense). So through outer experience I am aware of the reality of bodies as outer appearances in space, just as through inner experience I am aware of my soul's existence in time. I can know my soul only as an object of the inner sense, through appearances that make up an inner state. The being in itself that underlies these appearances is unknown to me. So the *Cartesian* idealism distinguishes only outer experience from dream. It takes lawfulness as the criterion of the truth of the first, in contrast to the lawlessness and false semblance of the second. In both it takes space and time for granted as conditions for the existence of objects. It only asks whether the objects of the

outer senses, which we place in space when awake, are really found in space, just as the object of the inner sense, the soul, is really in time. That is, it asks whether experience carries sure criteria for distinguishing it from imagination. Here the doubt can easily be removed, and in everyday life we always remove it. We examine the connection of appearances in both by general laws of experience. If our picture of outer things fits with those laws throughout, we cannot doubt that it constitutes true experience. So material idealism, in which appearances are considered as appearances only in their connection in experience, is very easy to remove. It is just as sure an experience that bodies are there outside us (in space) as it is that I myself exist, according to the representation of the inner sense (in time). The concept *outside us*, after all, means nothing but existence in space. But now consider the I in the statement *I am*. It means not only the object of inner intuition (in time) but the subject of consciousness. Likewise body means not only outer intuition (in space) but also the thing *in itself* that underlies this appearance. So the question whether bodies (as appearances of the outer sense) exist as bodies *outside my thoughts* can be answered no, without any hesitation, in nature. But the question whether I myself *as an appearance of the inner sense* (the soul according to empirical psychology) exist in time outside my power of representation stands exactly the same. It, too, must be answered no. In this way everything is decided and certain, when brought to its true meaning. Formal idealism (otherwise called transcendental by me) really does remove the material or *Cartesian* kind. If space is only a form of my sensibility, it is as real as a representation in me as I am myself. Then all that remains to be settled is the empirical truth of the appearances in it. But suppose that is not so, and that space and the appearances in it exist as something outside us. Then all the criteria of experience beyond our perception can never prove the reality of these objects outside us.

Section 50



§ 50.

II. *Cosmological Ideas*. (Critique, p. 405 ff.)

Pure reason, used transcendently, produces here its most remarkable phenomenon. Of all of them it also works most powerfully to wake philosophy from its dogmatic slumber and to move it to the hard business of the Critique of reason itself.

The reason I name this idea cosmological is that it always finds its object only inside the world of sense. It also needs no object except one that is an object of the senses. So far it is native and not transcendent, and consequently not yet an idea. To think of the soul as a simple substance, in contrast, is already to think of an object (the simple) of a kind that can never be presented to the senses. Still, the cosmological idea stretches the link between the conditioned and its condition (whether mathematical or dynamical) so far that experience can never equal it. So at this point it is always an idea, whose object can never be given adequately in any experience.

Section 51



§ 51.

Here, first of all, the use of a system of categories shows itself so plainly and unmistakably that, even without any other proofs of it, this one alone would prove its indispensability within the system of pure reason. Such transcendent ideas number only four, one for each of the classes of the categories. In each class they go only to the absolute completeness of the series of conditions that belongs to any given conditioned thing. Corresponding to these cosmological ideas pure reason likewise makes only four kinds of dialectical assertions. Because they are dialectical, they prove by that very fact that each one is opposed by a contradicting one, based on principles of pure reason that look just as plausible. No metaphysical skill in the finest distinctions can head off this conflict. It forces the philosopher to go back to the first sources of pure reason itself.

This antinomy was not thought up at will but is founded in the nature of human reason. So it is unavoidable and never comes to an end. It contains the following four theses with their opposites.

| | Statement | Opposing statement |

|---|---|---|

- | 1. | In time and in space the world has a *beginning* (a limit) | In time and in space the world has no limit: it is *infinite* |
- | 2. | All that is in the world is made up of the *simple* | Nothing is simple; all things are *composite* |
- | 3. | The world contains causes that work through *freedom* | There is no freedom at all: everything is *nature* |
- | 4. | Somewhere in the series of world causes is a *necessary* being | Nothing in the series is necessary; in this series *everything is accidental*. |

Section 52



§ 52.

Here is the strangest phenomenon of human reason. No example of anything like it can be shown in any other use of reason. As a rule we treat the appearances of the world of sense as if they were things in themselves. We take the principles of their connection to hold generally of things in themselves, and not merely of experience. This is just as usual, and without our Critique it is even unavoidable. Then an unsuspected conflict comes to light. It can never be settled in the usual dogmatic way, because the thesis and the antithesis can both be demonstrated by equally clear and irresistible proofs. (I vouch for the correctness of all these proofs.) Reason thus finds itself divided against itself. The skeptic exults over this state of affairs, but the critical philosopher must be set to reflection and unease by it.

Section 52b



§ 52b.

In metaphysics one can bungle about in many ways without having to fear being caught in an untruth. As long as we do not contradict ourselves, which is quite possible in synthetic statements even if wholly invented, we can never be refuted by experience. This holds in all cases where the concepts we connect are mere ideas, which cannot be given in experience at all (as to their whole content). How could we decide by 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, even the largest possible one. So the incorrectness of the affirming or the denying statement cannot be discovered by this touchstone.

There is only one possible case in which reason would reveal, against its will, its secret dialectic, which it falsely passes off as dogmatics. That would be if it based an assertion on a generally admitted principle, and from another, equally certified principle drew the exact opposite with the greatest correctness of inference. This case is actual here, with respect to four natural ideas of reason. From them arise four assertions on one side and as many counter-assertions on the other, each with correct consequence from generally admitted principles. In this way they expose the dialectical illusion of pure reason when using these principles, which would otherwise have to stay hidden forever.

Here, then, is a decisive experiment. It must necessarily uncover an error lying hidden in the presuppositions of reason.^[341-1] Of two contradicting statements, not both can be false, unless the very concept that underlies both is contradictory. For example, take the two statements “The square circle is round” and “The square circle is not round.” Both are false. As for the first, it is untrue that this circle is round, because it is square. But it is equally untrue that it is not round, meaning angular, because it is a circle. For this is just the logical mark of the impossibility of a concept: under its presupposition, two contradicting statements would be false at the same time. Since nothing third can be thought between them, nothing is thought at all by that concept.

^[341-1]: So I wish the critical reader to occupy themselves mainly with this antinomy. It looks as if nature itself had arranged this to make reason hesitate in its bold presumptions and to force it to examine itself. I take it on myself to defend every proof I have given for the thesis as well as for the antithesis, and so to demonstrate the certainty of the unavoidable antinomy of reason. Suppose this strange phenomenon brings the reader to go back and examine the presupposition underlying it. Then they will feel compelled to investigate with me, more deeply, the first foundation of all knowledge of pure reason.

Section 52c



§ 52c.

Now a contradictory concept of this kind underlies the first two antinomies. I call them mathematical because they deal with adding or dividing things of the same kind. From this I explain how it happens that the thesis and the antithesis are both false in each.

If I talk about objects in time and space, I am not talking about things in themselves, since I know nothing about these. I speak only of things in appearance, that is, of experience as a special kind of knowing objects, which is granted to human beings alone. Whatever I think of as being in space or in time, I may not say exists in itself in space and time even without this thought of mine. For then I would contradict myself. Space and time, with all the appearances they hold, are nothing existing in itself and outside my representations. They are themselves only ways of representing. It is plainly contradictory to say that a mere way of representing also exists outside our representation. So objects of the senses exist only in experience. To give them an existence of their own, standing by itself, apart from experience or before it, is the same as imagining that experience is real even without experience or before it.

Suppose I ask about the size of the world in space and time. For all my concepts it is equally impossible to say that it is infinite and that it is finite. Neither can be contained in experience. For no experience is possible of an *infinite* space or of an infinitely elapsed time. Nor is experience possible of the world's being

bounded by empty space or by an earlier empty time. These are only ideas. So this size of the world, determined one way or another, would have to belong to the world itself, quite apart from any experience. But that conflicts with the concept of a world of sense, which is merely a sum of appearances. Their existence and connection take place only in representation, namely in experience. For the world of sense is not a thing in itself but is nothing but a way of representing. It follows that the notion of a world of sense that exists by itself is self-contradictory. So the solution of the problem of its size will always be false, whether one tries it by affirming or by denying.

The same holds for the second antinomy, which concerns the division of appearances. Appearances are mere representations. The parts exist only in the representation of them, and so in the dividing, that is, in a possible experience in which they are given. The dividing goes only as far as that experience reaches. To suppose that an appearance, say the appearance of a body, already holds in itself, prior to all experience, all the parts that possible experience can ever reach is self-contradictory. It would be to give a bare appearance, one that can only exist inside experience, an existence of its own which comes before experience. Or it would be to say that mere representations are there before they are found in the power of representation. That is contradictory. So every solution of the misunderstood problem is also false, whether one asserts that bodies consist in themselves of infinitely many parts or of a limited number of simple ones.

Section 53



§ 53.

In the first class of the antinomy (the mathematical), the falsity of the presupposition lay in this: what contradicts itself (namely an appearance taken as a thing in itself) was represented as compatible in one concept. The second class of the antinomy, the dynamical, is different. There the falsity of the presupposition lies in this: what is compatible is represented as contradictory. In the first case the two opposed assertions were both false. Here, assertions that are set against each other only through a misunderstanding can both be true.

Mathematical connection necessarily presupposes that the things connected are of the same kind (in the concept of magnitude). Dynamical connection does not require this at all. When it is a question of the size of something extended, all the parts must be of the same kind among themselves and with the whole. When cause and effect are connected, sameness of kind may also be found, but it is not necessary. At least the concept of causality (by which something quite different from it is posited through something) does not require it.

Suppose we took the objects of the world of sense for things in themselves, and the natural laws cited above for laws of things in themselves. Then a contradiction could not be escaped. In the same way, if the subject of freedom were represented like the other objects as a mere appearance, the contradiction could not be avoided either. The very same thing would be affirmed and denied at once about one and the same object in one and the same sense. But suppose

natural necessity is related only to appearances and freedom only to things in themselves. Then no contradiction arises, even if we assume or admit both kinds of causality, however hard or impossible it may be to make the second kind understandable.

In appearance, every effect is an event, something that happens in time. By the general law of nature, some determination of the causality of its cause (a state of the cause) must come before it, and the effect follows on this by a steady law. But the cause's being determined to act causally must itself be something that takes place or *happens*. The cause must have *begun* to *act*, since otherwise no sequence in time could be conceived between it and the effect. The effect would then always have been, like the causality of the cause. So among appearances, the cause's *determination to act* must also have come about, and so be an event just like its effect, which in turn must have its cause, and so on. Natural necessity is therefore the condition by which the acting causes are determined. Suppose instead that freedom is to be a quality of certain causes of appearances. Then, with regard to appearances as events, freedom must be a power to begin them *of itself (sponte)*. That is, the causality of the cause itself would not have to begin and so would need no other ground to determine its beginning. But then the *cause*, as to its causality, must not stand under time determinations of its state. That is, it must not be an *appearance* in any way. It would have to be taken as a thing in itself, and only the *effects* as *appearances*.^[344-1] Suppose an influence of this sort, from beings of the understanding on appearances, can be thought without contradiction. Then natural necessity will cling to every link of cause and effect in the world of sense. But freedom is granted to that cause which is itself no appearance (though it underlies one). So nature and freedom can be ascribed without contradiction to the very same thing, though in different respects: once as appearance, and once as a thing in itself.

We have in us a power that is not only in connection with its subjectively determining grounds. These are the natural causes of its actions, and to that extent it is the power of a being that itself belongs to appearances. This power is also related to objective grounds that are merely ideas, so far as they can determine this power. This connection is expressed by *ought*. This power is called

reason. We can consider a being (the human being) solely in terms of this objectively determinable reason. Then it cannot be considered as a being of sense. The quality in question belongs to a thing in itself. We cannot grasp at all how it is possible: how the *ought*, which has never yet happened, can fix its activity and be the cause of actions that result in an appearance in the world of sense. Still, the causality of reason, as it bears on effects in the world of sense, would be freedom, so far as *objective grounds*, themselves ideas, count as determining with respect to them. For its action would then not depend on subjective conditions, and so not on any time conditions, and so not on the natural law by which these are determined. For grounds of reason give actions their rule in general terms, from principles, free of any influence from circumstances of time or place.

What I cite here serves only as an example to make things clearer. It is not necessarily part of our question, which has to be settled from mere concepts, apart from the properties we find in the actual world.

I can now say without contradiction that all actions of rational beings, so far as they are appearances (found in some experience), stand under natural necessity. But these same actions, considered merely in relation to the rational subject and its power to act by reason alone, are free. For what does natural necessity require? Nothing beyond that every event of the world of sense can be determined according to constant laws, and so a relation to a cause in appearance. Meanwhile the thing in itself that underlies it, and its causality, remain unknown. I say that the *law of nature stays in force*, whether or not the rational being causes effects in the world of sense through reason, and so through freedom, or does not determine them by grounds of reason. In the first case, the action takes place according to maxims whose effect in appearance will always conform to constant laws. In the second case, the action does not take place by principles of reason. It is then governed by the empirical laws of sensibility. In either case the effects are tied together by steady laws. We ask no more than this for natural necessity, and indeed we know no more of it. But in the first case reason is the cause of these natural laws, and so is free. In the second case the effects run by mere natural laws of sensibility, because reason exerts no influ-

ence on them. Yet reason is not itself determined by sensibility on that account (which is impossible), and so it is free in this case too. So freedom does not hinder the law of nature for appearances. Neither does that law impair the freedom of the practical use of reason, which is connected with things in themselves as determining grounds.

In this way practical freedom is saved. Practical freedom is the one in which reason has causality according to objectively determining grounds. This happens without the slightest harm to natural necessity with regard to the same effects as appearances. This can also help clarify what we had to say about transcendental freedom and how it agreement with natural necessity (in the same subject, but not taken in one and the same respect). With regard to transcendental freedom, whenever a being begins an action from objective causes, that is always a first beginning, in relation to these determining grounds. Yet that same action in the order of appearances is only a *subordinate beginning*. A state of the cause must come before it, which determines it and is itself determined in the same way by one still earlier. So in rational beings, or in beings generally so far as their causality is fixed in them as things in themselves, we can think a power to begin a series of states of itself, without falling into conflict with the laws of nature. The relation of an action to objective grounds of reason is not a time relation. Here what determines the causality does not come before the action in time. For such determining grounds do not stand for any relation of objects to the senses, and so none to causes in appearance. They stand for determining causes as things in themselves, which are free of time conditions. So the action can be regarded, with regard to the causality of reason, as a first beginning. And with regard to the series of appearances it can be regarded at the same time as only a subordinate beginning. Without contradiction it can be regarded in the first respect as free, and in the second (since it is mere appearance) as subject to natural necessity.

The *fourth* antinomy is removed in a similar way to reason's conflict with itself in the third. Distinguish the *cause in appearance* from the *cause of appearances*, so far as that cause can be thought as a *thing in itself*. Then both statements can stand side by side. One is that in the world of sense there is nowhere

a cause (by similar laws of causality) whose existence is absolutely necessary. The other is that this world is none the less tied to a necessary being as its cause (but one of a different kind and by a different law). The incompatibility of these two statements rests only on the misunderstanding of stretching to things in themselves what holds just of appearances, and of mixing both up in one concept.

[³⁴⁴-1]: The idea of freedom has its place only in the relation of the *intellectual*, as cause, to *appearance*, as effect. So we cannot ascribe freedom to matter with regard to its unceasing action by which it fills its space, although this action arises from an inner principle. Equally, we can find no suitable idea of freedom for pure beings of the understanding, God for example, so far as his action is immanent. For his action, though independent of outer determining causes, is still determined in his eternal reason, and so in the divine *nature*. Only when an action is to make *something begin*, so that the effect is to be found in the time series and so in the world of sense (for example the beginning of the world), does the question arise. Must the causality of the cause itself also begin? Or can the cause start an effect without its own causality beginning? In the first case the idea of this causality is the idea of natural necessity, in the second of freedom. From this the reader will see that when I explained freedom as the power to begin an event of itself, I hit exactly the concept that is the problem of metaphysics.

Section 54



§ 54.

This completes the statement and solution of the whole antinomy in which reason finds itself entangled when it applies its principles to the world of sense. The statement alone would already be a considerable contribution to our knowledge of human reason. That holds even if the solution of this conflict should not yet fully satisfy the reader. The reader has here a natural illusion to fight, which was only recently presented to them as an illusion, after they had always taken it for true. One consequence is unavoidable. It is quite impossible to get out of this clash of reason with itself for as long as someone mistakes sense-world objects for things in themselves, rather than what they actually are, namely mere appearances. So the reader is compelled to take up again the deduction of all our knowledge a priori, and a test of the deduction I have given, so as to arrive at a decision. I ask no more now. Suppose that in this work the reader has thought deeply enough into the nature of pure reason. Then the concepts by which alone the conflict of reason can be solved will already be familiar to them. Without that, I cannot expect full agreement even from the most attentive reader.

Section 55



§ 55.

III. *Theological Idea*. (Critique, p. 571 ff.)

The third transcendental idea is the ideal of pure reason. It gives material for the most important use of reason. But if that use is pursued only speculatively, it becomes overreaching (transcendent), and for that very reason dialectical. In the psychological and cosmological ideas, reason starts from experience and is led on, by pushing its grounds higher, to strive if possible for the absolute completeness of its series. Here, by contrast, reason breaks off completely. It proceeds from mere concepts of what would make up the absolute completeness of a thing in general. By the idea of a most perfect original being, it comes down to determining the possibility, and so also the reality, of all other things. So here the mere presupposition of a being is easier to tell apart as an idea from a concept of the understanding than in the earlier cases. This being is not thought in the series of experience, but for the sake of experience, to make the connection, order, and unity of experience comprehensible. For this reason the dialectical illusion could be put before our eyes easily here. It comes from our treating the subjective conditions of our thinking as objective conditions of the things themselves, and a necessary hypothesis for the satisfaction of our reason for a dogma. So I have nothing further to remark about the presumptions of transcendental theology, since what the Critique says about it is clear, evident, and decisive.

Section 56



§ 56.

General Remark on the Transcendental Ideas.

The things experience gives us are beyond our understanding in many ways, and many questions that the law of nature brings us to cannot be answered at all if they are pushed up to a certain height, always according to those laws. An example is why matter attracts matter. But suppose we leave nature entirely, or exceed all possible experience in following its connections, and so sink into mere ideas. Then we cannot say that the object is incomprehensible to us, or that the nature of things sets us unsolvable tasks. For then we have nothing to do with nature or with given objects at all. We have to do only with concepts that have their origin solely in our reason, and with mere beings of thought. All tasks arising from the concept of these must be solvable, because reason is able to, and has to, account fully for the way it proceeds.^[349-1] The psychological, cosmological, and theological ideas are all pure concepts of reason that can be given in no experience. So the questions reason puts to us about them are set for us not by the objects but by mere maxims of reason, for its own satisfaction. They must all be answerable in a sufficient way. This is done by showing that they are principles that bring how we use the understanding into complete agreement, completeness, and synthetic unity. To that extent they hold only of experience, but of its *whole*. An absolute whole of experience is impossible. Still, the idea of a whole of knowledge by principles is what alone can give it a

special kind of unity, namely that of a system. Without it, our knowledge is nothing but patchwork and cannot be used for the highest purpose (which is always only the system of all purposes). Here I mean not only the practical purpose but the supreme purpose of reason's speculative use as well.

So the transcendental ideas express the distinctive vocation of reason, that is, as the principle of systematic unity in how the understanding is used. But suppose this unity of the kind of knowing is taken as if it belonged to the object of knowledge. Suppose it is taken as *constitutive*, though it is really only *regulative*. Suppose we convince ourselves that by such ideas we can widen our knowledge far past any possible experience, and so in a transcendent way. In fact the ideas serve only to bring experience, within itself, as near to completeness as possible, that is, to limit its advance by nothing that cannot belong to experience. Then this is a mere misunderstanding in judging the actual calling of our reason and of its principles. This is a dialectic that in part muddles the use of reason in experience and partly sets reason against itself.

Conclusion on Determining the Boundary of Pure Reason.

[³⁴⁹-1]: Herr *Platner* therefore says shrewdly in his Aphorisms (§§ 728, 729): "If reason is a standard, no concept is possible that is beyond the grasp of human reason. Incomprehensibility occurs only in what is actual. Here the incomprehensibility arises from the inadequacy of the acquired ideas." So it only sounds paradoxical, and is otherwise not strange, to say that much in nature is incomprehensible to us (for example the power of generation). But when we rise higher still and go beyond nature itself, everything becomes comprehensible to us again. For then we leave behind entirely the *objects* that can be given to us, and occupy ourselves only with ideas. In these we can quite well grasp the law that reason prescribes through them to the understanding for its use in experience, because it is reason's own product.

Section 57



§ 57.

After the very clear proofs we gave above, it would be absurd to hope to know more about any object than belongs to the possible experience of it. It would be equally absurd to claim the slightest knowledge of any thing we assume is not an object of possible experience, so as to determine what it is like as it is in itself. For by what could we carry out this determination? Time, space, and every concept of the understanding have no other use, and can have none, than to make experience possible. This holds even more for concepts taken from empirical intuition or *perception* in the world of sense. If we leave out this condition even for the pure concepts of the understanding, they determine no object at all and have no meaning anywhere.

On the other hand, it would be an even greater absurdity if we admitted no things in themselves at all. It would be absurd to declare our experience the only possible way of knowing things, and so our intuition in space and time the only possible intuition. It would be absurd to declare our discursive understanding the original of every possible understanding, and so to want the principles of the possibility of experience held to be universal conditions of things in themselves.

Our principles confine the use of reason to possible experience. They could therefore themselves become *transcendent* and present the limits of our reason as limits to the possibility of things themselves. *Hume's* Dialogues can serve as

an example of this. That is the danger, unless a careful critique guards the boundaries of our reason even with respect to its empirical use, and sets a goal to its presumptions. Skepticism arose originally out of metaphysics and its lawless dialectic. In the beginning it may have declared everything that exceeds the use of reason in experience to be void and deceptive, merely in favor of the empirical use. But gradually people noticed that the very same principles a priori which are used in experience also lead unnoticed further than experience reaches, and apparently with the same right. So people began to put doubt even in the principles of experience. There is no need to worry about this, for common sense will always assert its rights here. But a special confusion arose in science, which cannot determine how far, and why only that far and no further, reason can be trusted. This confusion can be remedied, and every relapse in future times prevented, only by drawing, formally and from principles, the boundaries of our use of reason.

It is true that we cannot give any definite concept, beyond all possible experience, of what things in themselves may be. But we are still not free to refrain entirely from asking about them. Experience never fully satisfies reason. In answering questions it always sends us further back, and leaves us unsatisfied as to their complete explanation. Everyone can see this well enough from the dialectic of pure reason, which for that very reason has its good subjective ground. Who could bear this? We reach, from the nature of our soul, a clear consciousness of the subject, together with the conviction that its appearances cannot be accounted for *materialistically*. Who could then refuse to ask what the soul actually is? And if no concept from experience suffices for this, who could refuse to adopt a concept of reason (of a simple immaterial being) just for this purpose, even though we cannot prove its objective reality in any way? Who can be content with mere knowledge from experience in all cosmological questions about the duration and size of the world, about freedom or natural necessity? However we go about it, every answer given by principles of experience gives birth to a new question, which also wants answering. This shows clearly that all physical kinds of explanation are insufficient to satisfy reason. Last of all, who fails to see, in the complete contingency and dependence of everything

that can be thought and assumed by principles of experience, the impossibility of stopping there? Who does not feel driven, in spite of every warning against losing oneself in transcendent ideas, to look for rest and satisfaction beyond all concepts that can be justified by experience, in the concept of a being? The idea of this being cannot, in itself, be seen to be possible, though it cannot be refuted either, since it concerns a mere being of the understanding. Without it, reason would have to remain unsatisfied forever.

Boundaries (in extended beings) always presuppose a space that lies outside a certain fixed place and encloses it. Limits need no such thing. They are mere negations that affect a magnitude so far as it falls short of absolute completeness. Our reason, however, sees around it what looks like a space for the knowledge of things in themselves, though it can never have definite concepts of them and is confined to appearances.

As long as knowledge of reason is homogeneous, no definite boundaries can be thought for it. In mathematics and natural science, human reason does recognize limits but not boundaries. That is, it knows that something lies outside it, which it can never reach. But it does not know that it will itself be completed anywhere in its own inner progress. The extension of insights in mathematics, and the possibility of ever new discoveries, goes on to infinity. So does the discovery of new properties of nature, new forces and laws, by continued experience and their unification by reason. Even so, limits cannot be overlooked here. Mathematics goes only to *appearances*. What cannot be an object of sensible intuition, for example the concepts of metaphysics and morals, lies wholly outside its sphere. It can never lead there, but it does not need them at all. So there is no continuous progress toward these sciences, and no point or line of contact, as it were. Natural science will never reveal to us the inner nature of things, meaning whatever is not appearance yet can still serve as the highest ground for explaining appearances. But it does not need this for its physical explanations. Even if such a thing were offered to it from elsewhere (for example the influence of immaterial beings), it should reject it and not bring it into the course of its

explanations at all. It should always base its explanations only on what can belong to experience as an object of the senses and can be connected with our actual perceptions by laws of experience.

But metaphysics, in the dialectical attempts of pure reason (which are not started arbitrarily or wantonly but are driven by the nature of reason itself), leads us to boundaries. The transcendental ideas cannot be avoided, and yet they will never let themselves be made real. Just for that reason, they serve not only to show us the actual boundaries of the pure use of reason but also the way to determine them. That is also the aim and use of this natural disposition of our reason, which gave birth to metaphysics as its darling. Its conception, like every other in the world, is to be ascribed not to chance but to an original seed, wisely organized for great ends. For metaphysics is perhaps, more than any other science, laid in us by nature itself in its basic features. It cannot be regarded as the product of an arbitrary choice, or as an accidental extension in the course of experiences (from which it is wholly cut off).

Reason has, through all its concepts and laws of the understanding, enough for its empirical use, and so within the world of sense. Yet in them it finds no satisfaction of its own. Questions that keep coming back without end take away all hope of a complete answer. The transcendental ideas, whose aim is this completion, are such problems of reason. Reason now sees clearly that the world of sense cannot hold this completion. Neither can all those concepts that serve only to understand the world of sense: space, time, and all that we have listed as pure concepts of the understanding. What we call the world of sense is nothing more than a chain of appearances linked by universal laws. So it has no standing 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 known not merely as appearance but as things in themselves. Only in the knowledge of these can reason hope to see its demand for completeness satisfied at last, in advancing from the conditioned to its conditions.

Above (§§ 33, 34) we pointed out limits of reason with regard to all knowledge of mere beings of thought. Now the transcendental ideas make it necessary for us to advance up to them. They have led us, as it were, only to the point

of contact between the full space (of experience) and the empty one (of which we can know nothing, the noumena). So we can now fix the boundaries of pure reason as well. For every boundary also includes something positive. For example, a surface is the boundary of bodily space, yet is itself a space. A line is a space that bounds the surface. A point is the boundary of the line, but is still a place in space. Limits, by contrast, contain mere negations. The limits pointed out in the section cited are not yet enough, now that we have found that something still lies beyond them (although we will never know what it is in itself). For now the question is: how does our reason behave in connecting the things we know to the things we do not know and never will know? Here is a real connection of the known with something entirely unknown (and which will always remain so). Even if the unknown should not become the slightest bit better known (and in fact there is no hope of that), the concept of this connection must still be capable of being made definite and brought to distinctness.

So we are to think of an immaterial being, a world of the understanding, and a highest of all beings (all of them noumena). Only in these, as things in themselves, can reason find the completion and satisfaction that it could never expect from tracing appearances back to grounds of the same kind. And these really refer to something different from them (and so wholly unlike them). For appearances always presuppose a thing in itself and so point to it, whether or not we come to know it more closely.

But we can never know these beings of the understanding as they may be in themselves, that is, determinately. Yet in relation to the world of sense we must still assume them and connect them with it through reason. So we can at any rate conceive this connection through concepts that express their relation to the world of sense. Suppose we think the being of the understanding by means of only pure concepts of the understanding. Then we really think nothing definite by it, and so our concept is without meaning. Suppose we conceive it through properties taken from the world of sense. Then it is no longer a being of the understanding. It is then conceived as one of the phenomena, and it belongs to the world of sense. As an example, take the concept of the highest being.

The *deistic* concept is a wholly pure concept of reason. But it represents only a thing that contains all reality, without being able to determine a single one of these realities. To do that, the illustration would have to come from the world of sense. In that case my dealings would always be solely with an object of the senses, and not with something wholly unlike it, which is not and cannot be an object of the senses. I would, say, ascribe understanding to it. But I have no concept of an understanding except one like my own, that is, one to which intuitions must be given through the senses and which is occupied with placing them under rules for the unity of consciousness. In that case the very parts of my concept would always lie in appearance. And it was just the inadequacy of appearances that forced me to move past them to the concept of a being that does not depend on appearances at all, or is not entangled with them as conditions of its determination. Suppose I separate the understanding from sensibility, to have a pure understanding. Then nothing is left but the mere form of thinking without intuition. By that alone I can know nothing definite, and so no object. To that end I would have to think of another understanding that intuits objects. Of that I have not the slightest concept, since the human understanding is discursive and can know only through general concepts. The same happens to me when I ascribe a will to the highest being. I get this concept only by taking it from my inner experience. There my contentment depends on objects whose existence we need, and so sensibility lies at its base. This contradicts the pure concept of the highest being entirely.

Hume's objections to deism are weak. They never hit more than the proofs, and never the thesis of the deist's claim itself. But against theism, which is supposed to come about by a closer determination of our merely transcendent concept of the highest being, they are very strong. They are unanswerable in certain cases (in fact all ordinary ones), given how this concept is set up. Hume always holds to this: by the mere concept of an original being, to which we ascribe only ontological predicates (eternity, omnipresence, omnipotence), we really think nothing definite. Properties would have to be added that give a concept in the concrete. It is not enough, he says, to say that it is a cause. We must say what its causality is like, perhaps by understanding and will. And there his

attacks on the thing itself, namely theism, begin, whereas before he had stormed only the grounds of proof for deism, which brings no particular danger. His dangerous arguments all refer to anthropomorphism. He holds it to be inseparable from theism and to make it self-contradictory. But if you leave it out, theism falls too, and nothing is left but a deism. We can make nothing of that, it is no use to us, and it can serve as no foundation of religion and morals. If this unavoidability of anthropomorphism were certain, then whatever the proofs of the existence of a highest being might be, and even if all were granted, we could never determine the concept of this being without getting entangled in contradictions.

Suppose we combine the prohibition against all transcendent judgments of pure reason with the command, which seems to conflict with it, to venture as far as concepts that lie beyond the field of immanent (empirical) use. Then we find that both can hold together, but only exactly on the *boundary* of all permitted use of reason. That boundary is part of the field of experience no less than of the field of beings of thought. And we are thereby also taught how these remarkable ideas serve solely to determine the boundary of human reason. On the one hand, they keep us from extending knowledge from experience without limit, so that nothing would be left for us to know but the world. On the other hand, they keep us from going beyond the boundary of experience and wanting to judge of things outside it as things in themselves.

But we hold to this boundary if we limit our judgment merely to the relation that the world may have to a being whose concept itself lies outside all knowledge that we are able to have within the world. Then we do not ascribe to the highest being any of the properties *in itself* by which we think objects of experience, and so we avoid *dogmatic* anthropomorphism. But we still ascribe them to its relation to the world, and so permit ourselves a *symbolic* anthropomorphism, which really concerns only the language and not the object itself.

When I say that we are compelled to look at the world *as if* it were the product of a highest understanding and will, I really say no more than this. As a watch, a ship, a regiment stands to the craftsman, the shipbuilder, the comman-

der, so the world of sense (or all that makes up the basis of this sum of appearances) stands to the unknown. By this I know the unknown not as it is in itself, but as it is for me, namely in relation to the world of which I am a part.

Section 58



§ 58.

Knowledge of this kind is knowledge *by analogy*. By this word we do not mean, as the word is usually taken, an imperfect likeness between two things. We mean a perfect likeness between two relations among quite unlike things. [³⁵⁷-1] By means of this analogy a concept of the highest being remains, sufficiently determinate for us, although we have left out everything that could determine it absolutely and *in itself*. We determine it, after all, in relation to the world, and so to ourselves, and we need nothing more. The attacks *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 hit us. Nor can he charge us that nothing remains for us if objective anthropomorphism is taken away from the concept of the highest being.

Suppose we are granted at the start, as a necessary hypothesis, the *deistic* concept of the original being. (Hume does this too, in his Dialogues, where Philo argues against Cleanthes.) In this concept the original being is thought through nothing but ontological predicates such as substance and cause. *We must do this*, because reason, driven in the world of sense through nothing but conditions that are themselves conditioned, can find no satisfaction without it. And *we can properly do it* without falling into anthropomorphism, which carries predicates from the world of sense over to a being entirely different from the world. Those predicates are mere categories. They give no determinate con-

cept of the being, but for that very reason no concept limited to conditions of sensibility either. Then nothing can stop us from ascribing to this being a *causality through reason* in respect of the world, and so passing over to theism. We need not attribute this reason to it *in itself* as a property clinging to it. Consider the first point. It is the only possible way to drive the use of reason, with respect to all possible experience in the world of sense, to the highest degree and in thoroughgoing agreement with itself: namely to assume a highest reason as the cause of all connections in the world. Such a principle must be advantageous to reason throughout, and can never harm it in its use on nature. *Second*, Reason is thus not transferred to the original being as a property *in itself*, but only *in its relation* to the world of sense. So anthropomorphism is avoided entirely. For here only the *cause* of the form of reason, which is found everywhere in the world, is considered. Reason is ascribed to the highest being, so far as it contains the ground of this form of reason in the world, but only by analogy. That is, the expression only indicates the relation that the supreme cause, which we do not know, bears to the world, in order so as to settle everything in it, to the highest degree, in line with reason. This prevents us from using the property of reason to think God. We use it instead to think the world by means of it, as necessary for the greatest possible use of reason with respect to the world according to one principle. By this we admit that the highest being, as to what it is in itself, is entirely unfathomable for us and even unthinkable *in a determinate way*. So we are kept from using, in a transcendent way, our concepts of reason as an efficient cause (by means of the will) to determine the divine nature by properties that are still always borrowed from human nature, and from getting lost in coarse or visionary concepts. On the other side, we are also kept from flooding our contemplation of the world, by our concepts of human reason transferred to God, with hyperphysical kinds of explanation, and so from turning it away from its proper vocation. According to that vocation it should be a study of mere nature through reason, and not a presumptuous derivation of its appearances from a highest reason. The wording that fits our feeble concepts will be this: we think the world *as if* it derived from a highest reason as to its existence and inner determination. In this way we do

two things. On the one hand, we come to know the character that belongs to the world itself, without claiming to fix that of its cause in itself. On the other hand, we place the ground of this character (the form of reason in the world) in *the relation* of the highest cause to the world, without thinking the world enough for it on its own.^[360-1]

In this way the difficulties that seem to stand against theism disappear. We combine Hume's principle, not to push the use of reason in a dogmatic way past the field of all possible experience, with another principle that Hume overlooked entirely: not to regard the field of possible experience as what sets its own limit in the eyes of our reason. The Critique of reason marks here the true middle path between the dogmatism that Hume fought and the skepticism that he wanted to put in its place. It is not like other middle paths, which one is advised to work out mechanically for oneself (a bit of the one and a bit of the other), and by which nobody learns anything better. It is a path that can be determined precisely by principles.

^[357-1]: So there is an analogy between the legal relation of human actions and the mechanical relation of moving forces. I can never do anything to another person without giving them a right to do the same to me under the same conditions. In the same way, no body can act on another with its moving force without causing the other to act back on it with equal force. Here right and moving force are quite unlike things, but in their relation there is complete likeness. By means of such an analogy I can give a concept of the relation of things that are absolutely unknown to me. For example: as the promotion of the happiness of children = a stands to the love of parents = b, so the welfare of humankind = c stands to what we do not know in God = x, which we name love. That is not because it has the slightest likeness to any human inclination. It is because we can set its relation to the world as resembling the relation that things in the world have to one another. The concept of relation here, however, is a bare category, the concept of cause, which has no connection with sensibility.

[³⁶⁰-1]: Let me put it like this: the causality of the supreme cause is, with respect to the world, what human reason is with respect to its works of art. In this the nature of the supreme cause itself remains unknown to me. I only compare its effect, known to me (the order of the world), and its reasonableness with the effects of human reason known to me. So I call the former a reason, without thereby ascribing to it, as its property, the same thing I mean by this expression in a human being, or anything else known to me.

Section 59



§ 59.

At the start of this remark I took the picture of a *boundary* in order to fix the limits of reason with regard to its proper use. The world of sense holds appearances only, and these are not things in themselves. The understanding must assume the latter (noumena), precisely because it recognizes the objects of experience as mere appearances. In our reason both are contained together. So the question is: how does reason proceed in bounding 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 thing it comes only to another conditioned thing. Whatever is to set its bounds has to lie wholly beyond it, and that is the field of the pure beings of the understanding. For us this is an empty space, so far as the *determination* of the nature of these beings of the understanding is concerned. To that extent, when dogmatically determinate concepts are wanted, we cannot get beyond the field of possible experience. But a boundary is itself something positive. It belongs both to what lies within it and to the space that lies outside a given whole. So it is an actual positive knowledge in which reason shares merely by extending itself up to this boundary. It does not try to go beyond it, because there it finds an empty space before it, in which it can think forms for things but no things themselves. But the *bounding* of the field of experience by something that is otherwise unknown to reason is still a piece of knowledge that remains for rea-

son at this standpoint. By it reason is neither shut up within the world of sense nor raving outside it. As befits knowledge of a boundary, it confines itself to the relation of what lies outside to what lies inside.

Natural theology is a concept of this kind on the boundary of human reason. Reason is compelled to look out toward the idea of a highest being (and, in a practical respect, toward that of an intelligible world). It does so not to determine anything about this mere being of the understanding, and so outside the world of sense. It does so only to guide its own use inside the world of sense by principles of the greatest possible unity (theoretical as well as practical). For this it uses the relation of the world to a self-standing reason, the cause of all these connections. In this way reason does not merely *invent* a being. Something that only pure understanding thinks must necessarily be found outside the world of sense, and reason determines it only in this way, though of course only by analogy.

So our statement above, which is the result of the whole Critique, stands: “Through all its principles a priori, reason never teaches us anything more than objects of possible experience, and of these nothing more than what can be known in experience.” This limit does not stop reason from taking us as far as the objective *boundary* of experience. That is, it leads us to the *relation* to something that is itself no object of experience, yet must still be the highest ground of all experience. It does not teach us anything of that in itself. It teaches us only about reason’s own complete use, aimed at the highest purposes, in the field of possible experience. This is all the benefit that one can reasonably wish for here, and one has reason to be content with it.

Section 60



§ 60.

We have now given a full account of metaphysics as it is actually present in the *natural disposition* of human reason, and in what makes up the essential aim of working on it, as to its subjective possibility. But we found that this *merely natural* use of such a disposition of our reason entangles it in *dialectical* inferences that overreach. Some of these are merely apparent, and some even conflict with one another. This happens unless a discipline of reason, possible only through scientific critique, reins it in and sets it within limits. Moreover, this reasoning metaphysics is dispensable for the advancement of knowledge of nature, and may even harm it. So there still remains a task worth investigating: to find out the *purposes of nature* at which this disposition to transcendent concepts in our nature may be aimed. For everything that lies in nature must originally have been laid down for some useful aim.

Such an investigation is in fact precarious. I also admit that whatever I can say on this point is merely conjecture, as is everything concerning the first purposes of nature. In this case that is all I may be allowed, because the question is not about whether metaphysical judgments are objectively valid but about the natural disposition toward them. So it lies outside the system of metaphysics, in anthropology.

Take together all the transcendental ideas, whose sum makes up the real task of natural pure reason. This task forces reason to leave the mere contemplation of nature, go beyond all possible experience, and in this effort produce the thing (whether it is knowing or sophistry) called metaphysics. Then I believe I can see the aim of this natural disposition. It aims at loosening our concept free of the chains of experience and the confines of the mere study of nature. It aims to loosen it far enough that it at least sees open before it a field that contains only objects for pure understanding, which no sensibility can reach. The aim is not to occupy us speculatively with these objects (for we find no ground on which to stand). It is so that practical principles may have room. Without such a space ahead of them for what they must expect and hope, they could not spread to the universality that reason indispensably needs for moral purposes.

Here I find the following. The *psychological* idea is, for one thing, enough to show clearly, however little I see by it of the pure nature of the human soul, which is raised above all concepts from experience, that those concepts are inadequate. It thereby leads me away from materialism, a psychological concept that is no use for explaining nature and which, moreover, narrows reason in its practical aim. In the same way, the *cosmological* ideas, by the visible inadequacy of all possible knowledge of nature to satisfy reason in its rightful questioning, serve to keep us from naturalism, which wants to pass nature off as self-sufficient. Last, every natural necessity in the world of sense is conditioned, because it always presupposes that things depend on others. Unconditioned necessity can be looked for only in the oneness of a cause that differs from the world of sense. But the causality of such a cause, if it were merely nature, could never make the existence of the accidental comprehensible as its consequence. So by means of the *theological* idea reason frees itself from fatalism. This means both a blind necessity of nature in how nature itself hangs together with no first principle, and in the causality of this principle itself. The idea leads to the concept of a cause through freedom, and so of a supreme intelligence. So the transcendental ideas serve, though not to teach us anything positive, to remove the bold claims of *materialism*, *naturalism*, and *fatalism*, which cut down the field

open to reason. They thereby open up space for moral ideas beyond the field of speculation. This, I think, would to some extent explain that natural disposition.

Whatever practical benefit a purely speculative science may offer lies outside that science's own boundaries. So it can be regarded only as a scholion, and like all scholia it does not belong to the science itself as a part. Still, this connection falls at least inside the bounds of philosophy, above all a philosophy that draws on pure sources of reason, where reason's speculative use in metaphysics must of necessity be unified with the practical use in morals. So the inevitable dialectic of pure reason, when viewed in a metaphysics as a natural disposition, is not merely an illusion that needs to be dissolved. It also deserves, if possible, to be explained as an arrangement of nature with regard to its purpose. This job, as beyond the call of duty, may rightly not be demanded of metaphysics proper.

A second scholion, more closely related to the content of metaphysics, would have to be the settling of the questions followed through in the Critique from p. 642 to p. 668. There certain principles of reason are set out that fix, a priori, the order of nature, or rather of the understanding that has to look for nature's laws through experience. They look constitutive and law-giving with respect to experience. Yet they arise from mere reason, which must not be regarded, as the understanding is, as a principle of possible experience. Does this agreement rest on the following? Nature does not belong to appearances, or to their source, sensibility, in itself, but is found only in the relation of sensibility to the understanding. Similarly, the thoroughgoing unity of the understanding's use, for the sake of one whole possible experience (in a system), may come to the understanding only in relation to reason. So experience would also stand indirectly under the law-giving of reason. This can be considered further by those who want to trace the nature of reason even beyond its use in metaphysics, into the general principles for making a natural history in general systematic. For I presented this task as important in the book itself, but did not attempt to solve it.^[364-1]

And so I end the analytic solution of the main question I set myself: How is metaphysics in general possible? I have climbed from the place where its use is really found, at any rate in its results, up to the grounds that make it possible.

[³⁶⁴-1]: In the Critique it has been my constant purpose to miss nothing that might bring the study of the nature of pure reason to completion, however deep out of sight it may lie. After that, it is everyone's own choice how far to carry the inquiry, so long as they have been shown which further investigations might be made. That is a fair thing to ask of anyone who has made it his business to survey this whole field, in order later to hand it over to others for future farming and distribution as they like. To this belong also the two scholia, which because of their dryness would hardly recommend themselves to enthusiasts, and were therefore set down only for connoisseurs.

Solution: How is metaphysics possible as a science?



Solution of the General Question of the Prolegomena.

How Is Metaphysics Possible as a Science?

Metaphysics as a natural disposition of reason is actual. But taken by itself (as the analytic solution of the third main question proved), it is also dialectical and deceptive. To take principles from it, and in using them to follow the illusion, natural though false, can never produce science. It can produce only an empty dialectical art, in which one school outdoes another, but none can ever win lawful and lasting approval.

For metaphysics to claim, as a science, not just misleading persuasion but real insight and conviction, a critique of reason itself has to lay out the following. It must lay out the whole stock of concepts a priori, and their division by the different sources: sensibility, understanding, and reason. It must give a complete table of them, and an analysis of all these concepts with everything that can be inferred from them. Above all it must show the possibility of synthetic knowledge a priori by means of the deduction of these concepts, the principles of their use, and finally also its boundaries. And all this must be done in a complete system. So the Critique, and it alone, contains in itself the whole well-tested and proven plan, and even every means of putting it into practice, through which metaphysics as a science can be brought about. By other ways

and means it is impossible. So the question here is not so much how this business is possible. It is only how to get it going, how to move good minds from the perverse and fruitless work so far to a work that cannot deceive, and how such a union toward the common goal can best be directed.

This much is certain: whoever has once tasted the Critique is disgusted forever by all the dogmatic drivel that they put up with before out of necessity, because their reason wanted something to feed on and could find no better entertainment. The Critique relates to ordinary school metaphysics as *chemistry* does to *alchemy*, or as *astronomy* does to the fortune-telling art of *astrology*. I vouch that nobody who has fully worked through and understood the principles of the Critique, even only in these Prolegomena, will ever return to that old sophistical pseudo-science. They will rather look out with a certain delight to a metaphysics that is now fully in their power, needs no further preparatory discoveries, and can first give reason lasting satisfaction. Of all possible sciences, metaphysics alone can count with confidence on one advantage. It can be brought to completion and into a permanent state, where it need not change further and is not capable of increase by new discoveries. For here reason has the sources of its knowledge not in objects and their intuition (by which it can learn nothing further) but in itself. Once reason has presented the basic laws of its faculty completely and determinately, safe from all misreading, nothing remains that pure reason could know a priori, or even could rightly ask. The sure prospect of knowledge so definite and closed has a special charm, even if we set aside all its use (of which I will speak afterward).

All false art, all empty 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 the time has now come for metaphysics is proved by the state into which it has fallen among all learned peoples, despite the zeal with which sciences of every kind are otherwise pursued. The old arrangement of university studies still preserves its shadow. A single academy of sciences still stirs, now and then, by offering prizes, to make one or another attempt in it. But it is no longer counted

among the thorough sciences. One may judge for oneself how a man of spirit, whom one wished to call a great metaphysician, would take this well-meant but scarcely envied praise.

The time of decay of all dogmatic metaphysics has undoubtedly come. But a good deal is still missing before we can claim that the time of its rebirth, by means of a thorough and completed critique of reason, has already appeared. All transitions from one inclination to the opposite one pass through a state of indifference. That moment is the riskiest for an author, but, I think, the most favorable for the science. For when the party spirit has died out through a complete break with earlier ties, people's minds are best prepared to hear, bit by bit, proposals for a union on another plan.

I say I hope that these Prolegomena may perhaps stir up research in the field of critique. I hope they may give the general mind of philosophy, which seems short of food in its speculative branch, a fresh and very promising object of occupation. I can already imagine that everyone who has been made indignant and weary by the thorny paths I led them along in the Critique will ask me what I base this hope on. I answer: *on the irresistible law of necessity*.

We can no more expect the human mind to give up metaphysical investigations altogether than we can expect ourselves to stop breathing, so as not to keep taking in impure air. So there will always be metaphysics in the world. What is more, there will be metaphysics in every person, especially every thoughtful one, and for lack of a public standard each will cut it to suit themselves. What has been called metaphysics so far can satisfy no critical mind, but to renounce it entirely is also impossible. So in the end a critique of pure reason itself must be *attempted*. Or, if one exists, it must be *examined* and subjected to general scrutiny. Otherwise there is no way to answer this urgent need, which is more than plain curiosity.

Since I came to know the Critique, I have repeatedly finished reading a work of metaphysical content that both entertained and educated me by its precise concepts, its variety and order, and its easy style. And I could not help asking: *has this author really moved metaphysics a single step forward?* I ask pardon of the learned men whose writings have been useful to me in other respects and

have always contributed to the cultivation of the mental powers. For I admit that I have been unable to find, in their works or in my own lesser attempts (for which self-love speaks in my favor), that the science has been advanced in the least. The cause is entirely natural: that science did not yet exist, and cannot be put together piece by piece. Its seed must first be fully formed in advance in the Critique. But to prevent all misunderstanding, we must remember from the above the following. By analytic treatment of our concepts, the understanding is indeed helped quite a lot, but the science (of metaphysics) is not advanced in the least. Those analyses of concepts are only materials from which a science is first to be built. So we may analyze and determine the concept of substance and accident as beautifully as we like. That is quite good as preparation for some future use. But suppose I cannot prove that in everything that exists the substance persists and only the accidents change. Then the science was not advanced in the least by all that analysis. Now metaphysics has been unable to prove with valid a priori proof this statement, or the principle of sufficient reason. Still less could it prove any more complex statement, for instance one from the doctrine of the soul or to cosmology. In fact it has not been able to prove any synthetic statement a priori at all. So all that analysis accomplished nothing and produced and promoted nothing. After so much bustle and noise, the science is still where it was in the time of *Aristotle*. Admittedly, the arrangements for it, if only the guiding thread to synthetic knowledge had once been found, have undoubtedly been made far better than before.

If anyone feels offended by this, they can easily refute the charge by citing a single synthetic statement belonging to metaphysics that they offer to prove a priori in the dogmatic way. Only if they do this will I grant that they have really advanced the science. That holds even if the statement is otherwise well confirmed by common experience. No demand could be more moderate and fair. And in the (unavoidably certain) case of failure, no judgment could be fairer than this: that metaphysics as a science has not yet existed at all.

Only two things I must refuse, if the challenge is accepted. First, the game of *probability* and conjecture, which suits metaphysics as badly as it suits geometry. Second, a verdict handed down by the dowsing rod of so-called *common*

sense, which does not twitch for everyone but depends on personal qualities.

As for *the first*, nothing can be found more absurd than wanting to base one's judgments on probability and conjecture in a metaphysics, a philosophy from pure reason. Everything that is to be known a priori is thereby declared apodictically certain, and so must also be proved in that way. One might as well want to found geometry or arithmetic on conjectures. As for the calculus of probabilities in the latter, it contains no probable judgments. It contains quite wholly certain judgments about how possible particular cases are, given conditions of the same kind. Across the sum of all possible cases, these must come out according to the rule without fail, although the rule is not definite enough for each single chance event. Only in empirical natural science can conjectures (by induction and analogy) be tolerated, and even then the possibility of what I suppose has to be, at the least, wholly certain.

The *appeal to common sense* is, if possible, worse still. The matter here is concepts and principles, not so far as they are to be valid for experience, but so far as they are given out as valid even beyond the conditions of experience. For what is *sound common sense*? It is *ordinary understanding* so far as it judges correctly. And what is ordinary understanding? It is the faculty of knowing and using rules in the concrete, as distinct from *speculative understanding*, which is a faculty of knowing rules in the abstract. So ordinary understanding will hardly understand the rule that everything that happens is determined by its cause, and will never see it in general. It therefore demands an example drawn from experience. Once it is told that this means only what it always thought when a windowpane was broken or a household item had vanished, then it understands the principle and grants it too. So ordinary understanding has no use beyond the extent to which it can see its rules confirmed in experience (although those rules really do dwell in it a priori). To see them a priori and independently of experience belongs to speculative understanding and lies wholly outside the horizon of ordinary understanding. But metaphysics deals only with the latter kind of knowledge. And it is surely a bad sign of sound under-

standing to appeal to that witness, who has no judgment here at all. Otherwise people look down on common sense, except when they find themselves in a tight spot and know neither advice nor help in their speculation.

A common excuse used by these false friends of common sense (who praise it highly on occasion but usually despise it) is this. They say there must finally be some statements that are immediately certain, which need no proof and not even any account, because otherwise we would never come to the end of the grounds of our judgments. To prove this right, however, they can cite (apart from the principle of contradiction, which does not suffice to establish the truth of synthetic judgments) nothing else undoubted that they may ascribe directly to common sense except mathematical statements. Examples are that twice two makes four, that only one straight line lies between two points, and so on. But these are judgments as far from those of metaphysics as heaven is from earth. In mathematics I can make (construct) by my own thinking everything that I represent to myself as possible through a concept. I add one two to another two, step by step, and make the number four myself. Or I draw in thought all kinds of lines from one point to another, and only one of them can be drawn that is like itself in all its parts (equal as well as unequal). But from the concept of a thing I cannot, by all my power of thought, produce the concept of some other thing whose existence is bound up necessarily with the first. I have to consult experience. And even though my understanding gives me a priori (though only in relation to possible experience) the concept of such a connection (causality), I cannot display it a priori in intuition the way I can the concepts of mathematics. So I cannot show its possibility a priori. Instead, this concept, together with the principles of its application, always needs, if it is to be valid a priori, as is demanded in metaphysics, a justification and deduction of its possibility. Otherwise one does not know how far it is valid, and whether it can be used only in experience or also outside it. So in metaphysics, as a speculative science of pure reason, one can never appeal to common sense. One can appeal to it only if one is forced to leave metaphysics, and to give up all pure speculative knowledge, which must always be a knowing, and so also metaphysics itself and its teaching (on certain matters). Then a rational faith alone is

possible, and is found sufficient for our need (perhaps even more salutary than knowledge itself). For then the shape of the matter is quite changed. Metaphysics must be a science, not merely as a whole but in each of its parts. Otherwise it is nothing at all, because as speculation of pure reason it has no hold anywhere except on general insights. Outside metaphysics, probability and common sense can well have their useful and rightful use, but by quite their own principles, whose weight always depends on the relation to the practical.

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

Appendix



What Can Be Done to Turn Metaphysics into an Actual Science.

Every path taken so far has failed to reach this goal. Without a preceding critique of pure reason, it will probably never be reached. So it seems not unreasonable to ask for the attempt now set before us to be put through an exact and careful examination. The alternative is to think it more advisable to give up all claims to metaphysics entirely. In that case, if one stays true to one's resolve, there is nothing to object to. Take the course of things as it actually goes, not as it should go. Then there are two kinds of judgments. One is a *judgment that comes before the investigation*. In our case that is the one where the reader passes judgment, from their own metaphysics, on the Critique of Pure Reason (which is first to investigate the possibility of that metaphysics). The other is a *judgment that follows the investigation*. Here the reader can set aside for a while the conclusions of the critical investigations, which may collide rather strongly with the metaphysics the reader otherwise accepts. They first examine the grounds from which those conclusions may be derived. Suppose what ordinary metaphysics teaches were settled and certain, as geometry is. Then the first kind of judging would be right. For if the consequences of certain principles conflict with settled truths, those principles are false and are to be rejected without further investigation. But that is not how it stands. Metaphysics has no store of undisputedly certain (synthetic) statements. It may even have a multitude of

them that look just as plausible as the best among them, yet conflict with one another in their consequences. And there is nowhere in it any sure criterion of the truth of properly metaphysical (synthetic) statements. So the earlier way of judging cannot hold. The investigation of the principles of the Critique must come before any judgment of their worth or worthlessness.

A Sample of a Judgment on the Critique That Comes Before the Investigation.

A judgment of this kind is found in the *Göttingische gelehrte Anzeigen* (Göttingen Learned Notices), third issue of the supplement, January 19, 1782, p. 40 ff.

Suppose an author who knows the subject of their work well, and has taken pains to bring their own thinking to bear throughout, falls into the hands of a reviewer. Suppose the reviewer in turn is sharp enough to spot the points on which the worth or worthlessness of the writing really depends. This reviewer does not cling to words but goes after the matters themselves. They do not merely sift and examine the principles from which the author set out. Then the author may dislike the severity of the judgment, but the public does not mind, since it gains by it. And the author can be content to get the chance to correct or clarify essays that an expert has examined early. In this way, if the author believes they are fundamentally right, they can remove in good time the stumbling block that might later harm the work.

I find myself in quite a different position with my reviewer. He seems not to see at all what the investigation I was engaged in (successfully or not) really turned on. Perhaps he lacked the patience to think through a lengthy work. Perhaps he was in a sour mood over a threatened reform of a science in which he thought he had long since settled everything. Or perhaps, as I am reluctant to suppose, he has a genuinely narrow view that never lets him think beyond his school metaphysics. In short, he rushes through a long series of statements about which one can think nothing without knowing their premises. He scatters his blame here and there. The reader can see the ground for it no better than they can understand the statements it is aimed at. So the review can neither inform the public nor do the slightest harm to me in the judgment of

experts. I would therefore have passed over this review completely, if it did not give me occasion for some clarifications that could protect readers of these Prolegomena from misreading in some cases.

The reviewer wants a vantage point from which he can most easily show the whole work in an unfavorable light, without troubling himself with any particular investigation. So he starts and finishes by announcing: "This work is a system of transcendental (or, as he translates it, higher)[³⁷³-1] idealism."

When I saw this line, I soon saw what kind of review would result. It was about as if someone who had never heard or seen anything of geometry found a *Euclid* and was asked to give their judgment of it. After leafing through it and coming upon many figures, they might say: "The book is a systematic instruction in drawing. The author uses a special language to give obscure, unintelligible rules, which in the end can accomplish nothing more than anyone can manage with a good natural eye," and so on.

Let us look, though, at what kind of idealism it is that runs through my whole work, although it is far from being the soul of the system.

The claim of every genuine idealist, from the Eleatic school down to Bishop *Berkeley*, is summed up in this formula: "All knowledge through the senses and experience is nothing but illusion, and truth is only in the ideas of pure understanding and reason."

The principle that governs and determines my idealism throughout is the opposite: "All knowledge of things derived from sheer pure understanding or pure reason is nothing but illusion, and truth is only in experience."

But that is exactly the opposite of that genuine idealism. So how did I come to use this term for a quite contrary purpose, and why did the reviewer find it everywhere?

The solution of this difficulty rests on something one could easily have seen from the context of the work, had one wished. Space and time, with everything contained in them, are not the things or their properties in themselves but belong only to appearances of them. Up to here I share a confession with those idealists. They, though, and *Berkeley* most of all, took space to be a mere empirical representation. They thought that it, like the appearances in it, would

become known to us, together with all its determinations, only through experience or perception. I show first of all, by contrast, that space (and likewise time, which Berkeley did not notice) can be known by us a priori, along with all its determinations. Space, like time, dwells in us before all perception or experience as a pure form of our sensibility, and makes all intuition of it, and so all appearances, possible. It follows that truth rests on universal and necessary laws as its criteria. So in Berkeley's case experience could have no criteria of truth, since he laid nothing a priori at the base of its appearances. From this it followed that it was nothing but illusion. In our case, by contrast, space and time (in connection with the pure concepts of the understanding) prescribe their law a priori to all possible experience. This at the same time gives the sure criterion for telling truth from illusion in experience.^[375-1]

My so-called (really critical) idealism is therefore of a quite distinctive kind. It overturns the usual kind. Through it all knowledge a priori, even that of geometry, first gets objective reality. Without my proven ideality of space and time, not even the most zealous realists could claim that reality. Since this is how matters stand, I wish, to prevent all misunderstanding, that I could name my concept differently. But changing it entirely is not easy to do. So let me be allowed in future, as already said above, to call it formal idealism, or better still critical idealism, so as to tell it apart from the dogmatic idealism of *Berkeley* and from *Descartes's* skeptical idealism.

Nothing else about the review of this book stands out. Its author judges wholesale (*en gros*) from start to finish. That is a cleverly chosen manner, because it does not give away one's own knowledge or ignorance. A single detailed (*en détail*) judgment that touched the main question, as it should have, might have revealed my mistake, or perhaps the extent of the reviewer's grasp of this kind of investigation. It was also a not badly devised trick, 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 reports. The trick is to chase a crowd of statements one after another in one breath. Torn out of the connection with their proofs and explanations, they must necessarily sound absurd (especially since they stand so much at the opposite pole to all school metaphysics). One

assaults the reader's patience until the reader is disgusted. Then, after introducing me to the ingenious statement that constant illusion is truth, one closes with the blunt but fatherly lesson: why then the fight against the commonly accepted language, why and where from the idealistic distinction? This is a judgment that finally puts everything distinctive about my book, which was first supposed to be metaphysically heretical, in a mere innovation of language. It clearly proves that my presumptuous judge did not understand the least part of it, and, on top of that, did not properly understand himself.^[376-1]

The reviewer speaks, meanwhile, as a man would who has to be aware of important and superior insights, which he still keeps hidden. For I have recently learned nothing regarding metaphysics that could entitle anyone to such a tone. But he does very wrong in withholding his discoveries from the world. Without doubt there are more people like me who, with all the splendid things written in this field over a long period, still could not find that the science has been advanced by a finger's breadth. One does still find sharpening definitions, giving lame proofs new crutches, and putting new patches or a changed cut on the patchwork quilt of metaphysics. But the world does not ask for that. The world is sick of metaphysical assertions. It wants how this science is possible, the sources from which certainty in it could come, and sure criteria for telling the dialectical illusion of pure reason from the truth. The reviewer must have the key to this, or else he would never have taken so lofty a tone.

I am starting to suspect, though, that this need of the science may never have occurred to him. Otherwise he would have directed his review at this point, and even an unsuccessful attempt in so weighty a matter would have won his respect. If so, we are good friends once more. Let him think as deeply into his metaphysics as he sees fit. Nobody should stop him. But he cannot judge what lies outside metaphysics, namely its source in reason. I can show that my suspicion is not baseless: he did not say a single word of the possibility of synthetic knowledge a priori. That was the real task, on whose solution the fate of metaphysics rests entirely, and at which my Critique (like my Prolegomena here) aimed completely. The idealism he ran into, and on which he stuck, had been taken into the doctrine only as the one means of solving that

task (although it also received confirmation on other grounds). And there he should have shown one of three things. Either that the task lacks the importance I attach to it (as I do again now in the *Prolegomena*). Or that it cannot be solved at all by my concept of appearances. Or that it can be solved better in another way. But I find not a word of that in the review. So the reviewer understood nothing of my writing, and possibly nothing of the spirit and nature of metaphysics itself. The alternative, which I prefer to assume, is that a reviewer's haste, indignant at the difficulty of working his way through so many obstacles, cast an unfavorable shadow over the work lying before him and made it unrecognizable to him in its basic features.

A learned newspaper is still very far from keeping, in the field of metaphysics, the authority it otherwise deserves elsewhere. This holds however well and carefully its contributors are chosen. Other sciences and kinds of knowledge do have their standard. Mathematics has its standard in itself. History and theology have theirs in secular or sacred books, natural science and medicine in mathematics and experience, jurisprudence in law books, and even matters of taste in models from the ancients. For judging the thing called metaphysics, though, the standard is yet to be found (I have made an attempt to determine both it and its use). What is to be done until it is worked out, if one must still pass judgment on writings of this kind? If they are dogmatic, one may handle them as one likes. Nobody will play the master over another for long without someone turning up to pay him back. But suppose they are critical, and not with respect to other writings but to reason itself. Then the standard of judgment cannot be presupposed but is only now being sought. In that case objection and blame may be made unasked, but there must still be a basis of tolerance. The need is shared, after all, and the absence of the necessary insight makes a judge's decisive authority unfitting.

I want to tie this defense of mine at the same time to the interest of the philosophizing community. So I propose a test that is decisive on how all metaphysical investigations must be directed to their shared goal. It is just what mathematicians have done on occasion to settle the superiority of their methods in a contest. It is a challenge to my reviewer. In his own manner, let him

prove by grounds a priori, as is proper, any single truly metaphysical statement that he asserts. It must be synthetic, known a priori from concepts, and perhaps one of the most indispensable, for example the principle of substance's persistence, or that of the necessary determination of world events by their cause. Suppose he cannot do this (but silence is a confession). Then he must admit the following. Metaphysics is nothing at all without apodictic certainty of statements of this kind. So its possibility or impossibility must first of all be settled in a critique of pure reason. So he is obliged either to confess that my principles of the Critique are correct or to prove their invalidity. But I already see that, however carelessly he has relied so far on the certainty of his principles, he will not find in the whole range of metaphysics a single one with which he can boldly appear, once it comes to a strict test. So I will grant him the most favorable condition one can expect in a contest: I take the burden of proof (*onus probandi*) from him and let it be laid on me.

He finds in these Prolegomena and in my Critique (pp. 426–461) eight statements, which always conflict two against two. Each of them belongs necessarily to metaphysics, which must either accept or refute it (although there is not a single one that has not been accepted in its time by some philosopher). Now he has the freedom to choose any one of these eight statements as he pleases, and to accept it without proof, which I make him a present of. But he may choose only one (wasting time will serve him as little as it serves me). Then he may attack my proof of the opposite statement. Suppose I can still save my proof, and so show that, by principles that every dogmatic metaphysics must necessarily recognize, the opposite of the statement he adopted can be proved just as clearly. Then it is settled that metaphysics has an inherited defect. It cannot be explained, much less removed, except by ascending to its birthplace, pure reason itself. So my Critique must either be accepted, or a better one put in its place, and so at least be studied. That is the only thing I now demand. Suppose instead I cannot save my proof. Then a synthetic statement a priori from dogmatic principles stands firm on my opponent's side. My charge against ordinary metaphysics was then unjust, and I offer to acknowledge his blame of my Critique as justified (although that would be far from the conse-

quence). For this, however, it would be necessary, I think, to step out of incognito. I do not see how else to prevent my being honored or besieged, instead of with one problem, with several, by opponents who are unnamed and yet uninvited.

Proposal for an Examination of the Critique, After Which Judgment Can Follow.

I am also grateful to the scholarly public for the silence in which it honored my Critique for a good while. This silence shows that judgment was postponed. It therefore shows some suspicion that a work which leaves all accustomed paths and takes a new one, which one cannot find one's way into at once, may still hold something. Perhaps something through which an important but now withered branch of human knowledge could gain new life and fruitfulness. So it shows caution not to break off and destroy the still tender graft by a hasty judgment. Just now a sample of a judgment delayed for such reasons has come before my eyes in the *Gothaische gelehrte Zeitung* (Gotha Learned Newspaper). Every reader will see its thoroughness for themselves (leaving aside my praise, which is suspect here) from its clear and unfalsified presentation of one piece belonging to the first principles of my work.

Now I make a proposal. A large building cannot possibly be judged as a whole at once by a quick estimate. So let it be examined piece by piece from its foundation. In doing so, let the present Prolegomena be used as a general outline, with which the work itself could then be compared from time to time. This request would be immodest and would deserve to be turned away with displeasure, if it rested on nothing more than my exaggerated sense of importance, which vanity usually lends to all one's own products. But the affairs of all speculative philosophy now stand so that they are on the point of dying out completely. Yet human reason clings to them with a never-dying inclination. That inclination is now trying, though in vain, to turn into indifference, only because it is unceasingly deceived.

In our thinking age it cannot be supposed that many deserving men would fail to use every good opportunity to work together for the common interest of ever more enlightened reason, if only some hope shows itself of reaching the

goal that way. Mathematics, natural science, laws, the arts, even morals and the like do not yet fill the soul completely. There always remains in it a space marked out for mere pure speculative reason. Its emptiness forces us to look for occupation and entertainment, in grimaces or trifling or even visionary fancy. Seemingly this is occupation, but at bottom it is only distraction, to drown out the troublesome call of reason. Reason, according to its vocation, demands something that satisfies it for its own sake, and does not merely keep it busy for the sake of other aims or for the interest of inclinations. So a consideration that deals only with this realm of reason standing on its own has a great charm for anyone who has tried to widen their concepts in this way. I have good reason to suppose so, because in this realm all other knowledge, even purposes, must meet and unite in one whole. I may well say its charm is bigger than the charm of any other theoretical knowledge, none of which one would readily trade for it.

I put forward these Prolegomena as the plan and guide of the investigation, and not the work itself, for this reason. As to content, order, manner of teaching, and the care spent on each statement in weighing and testing it before setting it down, I am even now quite satisfied with the work. (It took years to satisfy myself fully, not only about the whole, but sometimes about a single statement and its sources.) But I am not fully satisfied with my presentation in some sections of the Doctrine of Elements, for example the deduction of the understanding's concepts or the chapter on the paralogisms of pure reason. A certain wordiness in these sections hinders clarity. In their place one can take what the Prolegomena say here about these sections as the basis of the examination.

The Germans are praised for getting further than other peoples in whatever requires perseverance and sustained diligence. If that opinion is well founded, here is an occasion to complete an undertaking and confirm that favorable opinion. There is hardly any doubt it will succeed, all thinking people share an equal interest in it, and yet it has so far not succeeded. This is especially so because the science concerned is of such a special kind that it can be brought at once to its full completeness and into that *permanent* state in which it cannot be advanced in the least, nor increased or even altered by later discovery. (I do

not count here polish through clarity increased here and there, or benefit added for various purposes.) This is an advantage no other science has or can have, because none concerns a faculty of knowledge so wholly cut off, independent of the others, and not mixed up with them. The present moment also seems not unfavorable to this proposal of mine. In Germany people now hardly know what else to occupy themselves with, apart from the so-called useful sciences, so that it should not be mere play but at the same time a business by which a lasting aim is reached.

How the efforts of scholars could be united toward such a goal, and what means to devise for it, I must leave to others. I do not mean to ask anyone to follow my statements slavishly, or even to flatter myself that this will happen. As it may turn out, attacks, repetitions, restrictions, or else confirmation, supplement, and extension may occur. Provided the matter is investigated from the very ground upward, it can no longer fail that a doctrinal structure comes about by this, though not mine. That could become a legacy for posterity, for which it will have reason to be grateful.

Once the principles of the Critique are in order, one could ask what metaphysics can be expected from them. It would take too long to show here that this metaphysics need not appear poor and reduced to a small figure because its false feathers have been plucked. In other respects it can appear richly and decently furnished. Other great benefits that such a reform would bring, though, are at once obvious. Ordinary metaphysics at least did some good by seeking out the elementary concepts of the pure understanding, to make them distinct by analysis and determinate by explanations. In that way it became a discipline for reason, in whatever direction reason may afterward choose to turn. That was all the good it did, however. For it destroyed this merit again. By its daring assertions it fostered conceit. By subtle evasions and gloss it fostered sophistry. By the ease of getting past the hardest problems with a bit of school wisdom, it fostered shallowness. Shallowness is the more seductive the more it can choose to take on some of the language of science in one case and of popularity on the other, and so is all things to all people but in fact nothing anywhere. Critique, by contrast, gives our judgment the standard by which knowl-

edge can be told from pseudo-knowledge with certainty. And by being fully put into practice in metaphysics, it lays the groundwork for a way of thinking whose good influence afterward spreads to every other use of reason, and first instills the true philosophical spirit. The service it does for theology is also surely not to be underrated. It makes theology independent of the judgment of dogmatic speculation, and thereby puts it wholly in safety against all attacks from such opponents. Ordinary metaphysics promised theology much assistance but afterward could not keep this promise. Moreover, by calling speculative dogmatics to its assistance, it had done nothing except arm enemies against itself. Visionary fanaticism cannot arise in an enlightened age except by hiding behind a school metaphysics. Under its protection it can dare to rave, as it were, with reason. Critical philosophy drives it out of this last hiding place. And over all this, it cannot be anything but important to a teacher of metaphysics to be able to say, with general agreement, that what they teach is now at last also *science*, and that real benefit is thereby done to the commonwealth.

[³⁷³-1]: Not the *higher* one, by any means. High towers, and the metaphysically great men who are like them, both of which are usually surrounded by plenty of wind, are not for me. I belong in the fertile *bathos* (depth) of experience. The word transcendental, the meaning of which I have indicated so many times, the reviewer did not even grasp (so hastily did he look at everything). It means not something that goes beyond all experience, but what comes before it (a priori) yet is destined for nothing more than to make knowledge from experience possible. When these concepts exceed experience, their use is called transcendent, which is distinguished from the immanent use, that is, use confined to experience. All misreadings of this kind were adequately forestalled in the work. But the reviewer found his advantage in misreadings.

[³⁷⁵-1]: Genuine idealism always has a visionary aim, and can have no other. Mine, however, serves only to comprehend the possibility of our knowledge a priori of objects of experience. That is a problem that has not yet been solved, indeed not even raised. This brings down the whole visionary idealism. It always (as can be seen already from *Plato*) inferred, from our knowledge a pri-

ori (even that of geometry), another (namely intellectual) intuition than that of the senses. For it never occurred to people that the senses too should intuit a priori.

[³⁷⁶-1]: The reviewer mostly fights his own shadow. If I set the truth of experience against dream, he does not think at all that this concerns only the familiar “dream taken objectively” (*somnio objective sumto*) of *Wolffian* philosophy. That is merely formal, and does not look to the difference between sleeping and waking at all, and cannot in a transcendental philosophy. Besides, he describes my deduction of the categories and the table of the principles of the understanding as “commonly known principles of logic and ontology, put in an idealistic fashion.” Readers need only look up these Prolegomena on that point to be convinced that no more wretched, and even historically more incorrect, judgment could be passed.