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First launched: July 2004

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## **Prolegomena [= Preliminaries] to any Future Metaphysic that can Present itself as a Science**

**By Immanuel Kant**

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### **INTRODUCTION**

These *Preliminaries* are meant for the use not of learners but of future teachers; and even the teachers shouldn't expect this book to help them by neatly laying out a ready-made science. Rather, it is to help them to *discover* this science. [Throughout this work, 'science' means 'branch of knowledge that is theoretically organised, highly structured, and soundly based'.]

For some learned people, philosophy is just the history of philosophy (ancient and modern); these preliminaries are not written for them. They must wait their turn. When those who work to draw ·truth· from the well of reason itself have done their work, *then* the historians can give the world the news about their results. ·But they won't regard it as *news*, because· nothing can be said now that the historians won't think has been said already! And it is safe to predict that they'll think the same about anything said in the future; human understanding has busied itself for centuries with countless topics in many ways, so it is to be expected that every new idea will resemble *something* that has been said in the past.

If you think that metaphysics is worth studying, my aim is to convince you of the following:

It is absolutely necessary that you stop your work for a while, regard anything that has been done as *not* having been done, and face up to the preliminary question of *whether such a thing as metaphysics is even possible*.

If it is a science, why can't it get universal and lasting approval, like other sciences? If it is not, what enables it to go on giving itself airs with its *pretence* of being a science, keeping men's minds in suspense with hopes that never die but are never fulfilled? If we are to show that there is knowledge to be had from metaphysics, or to show that there isn't, we must once and for all reach a conclusion about the nature of this would-be science, for it can't go on as it has been doing. It seems close to ridiculous, when every other science makes steady progress, that this one - claiming to be wisdom personified, the oracle that everyone consults - goes on circling around the same spot, never taking a step forwards. Its fringe hangers-on have scattered; and people who are sure enough that they can shine in other sciences won't be found risking their reputations in this one, where there are no objective standards for distinguishing sound knowledge from mere chatter, so that any ignoramus can feel entitled to pass judgment.

There's nothing extraordinary in the idea that when people have worked hard at a science they should wonder how much progress it has made, and be led from that to wonder whether such a science is possible at all. Human reason so loves *building* that it has repeatedly built a tower of theory and then dismantled it to check the soundness of the foundation. It is never too late to become reasonable and wise; but if an insight comes late, it will be that much harder to make use of it.

When we ask whether a certain science is *possible*, that presupposes that we have doubts about whether it is *actual*. That doubt will shock anyone whose whole fortune, perhaps, consists in this supposed jewel called 'metaphysics'; and so anyone who voices the doubt can expect to be attacked on all sides. Some of the attackers - clutching their big metaphysical books, and proudly conscious of their intellectual possessions, which they think are legitimate because they are old! - will look down on him with contempt. Others, for whom everything they see is all of a piece with something they have seen before, won't understand him. And for a while things will stay as they were, as though nothing had happened to raise the hope or the fear of an impending change.

Nevertheless, I confidently predict that if you read these preliminaries and think for yourself,

not only will you come to doubt the supposed science that you have practised under the name of metaphysics, but eventually you will become quite sure that nothing *like* that *can* exist without satisfying the demands that I shall state here - demands on which its possibility depends. You will also become sure that since the demands never have been met, there has up till now been no such thing as metaphysics.

But the search for metaphysics will continue, because the interests of human reason are so closely bound up with it; so you will agree that metaphysics is unstoppably on the road to a total reform (or, better, a new birth) on a wholly new plan, even if people struggle against it for a while.

David Hume's attack on metaphysics was more decisive for its fate than any other event since the *Essays* of Locke and Leibniz - actually, since the earliest recorded beginnings of metaphysics. He threw no *light* on this kind of knowledge, but he struck a

*spark* from which a light could have been kindled, if it had fallen on something flammable and the resultant smoulder had been nursed into flames.

Hume's primary starting-point was a single, though important, concept of metaphysics, namely that of *the connection of cause with effect* (including such derivative concepts as those of *force* and *action* and so on). Reason purports to have given birth to this concept, but Hume put to reason this challenge:

Explain to me what entitles you to think there could be a thing *x* such that:

*given that there is x, there must necessarily also be something  
else y -*

for that's what the concept of cause says.

He showed beyond question that it is completely impossible for reason to have - in an *a priori* way and purely through concepts - with no input from experience - the thought of such a union of *x* with *y*, because the thought of such a union includes the thought of necessity. We cannot at all see why, given that one thing exists, some other thing *necessarily* must exist, or how the concept of such a connection could arise *a priori*. From this he inferred that reason is utterly deluded regarding the concept of cause, wrongly thinking it to be among her own children when really it is a bastard child of the imagination that was got in the family way by experience. What the imagination did - according to Hume - was to consider certain sense-impressions that were related to one another by the law of association

- so that, for instance, after experiencing many *F* impressions followed by *G* ones, one gets into the *habit* of expecting a *G* whenever one experiences an *F*, the habit becoming strong enough so that any new experience of an *F* *compels* one to expect a *G* -

and to mistake a  $\checkmark$ subjective necessity (habit) for the  $\checkmark$ objective necessity arising from intellectually seeing what must be the case. He inferred from this that reason cannot come up with a thought of the form *x is necessarily and objectively connected with y*, or even with the *general* thought of that *kind* of connection. If reason did produce any such thought (Hume held), the concepts it involved would be purely fictitious, and all reason's claims to *a priori* knowledge would be merely the deliverances of ordinary experience, wrongly labelled. What Hume was saying, in effect, was that metaphysics does not exist, could not possibly exist.<sup>1</sup>

Hume's inference was hasty and wrong, but at least it was based on investigation; and this investigation thoroughly deserved a better response than it got. It ought to have brought together the intelligent people of the time to search for a happier solution of Hume's problem as he had formulated it; and if that had happened, a complete reform of the science of metaphysics would have quickly followed.

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<sup>1</sup> Yet Hume called this destructive science of his 'metaphysics' and put a great price on it. 'Metaphysics and morals', he says, 'are the most important branches of learning. Mathematics and natural science are not half so valuable.' But all that this brilliant man had in his view was the negative work involved in damping down the extravagant claims of speculative reason and thus settling many endless and vexatious controversies that lead mankind astray. He lost sight of the positive harm that is done when reason is robbed of its most important vistas - which it needs if it is to mark out for the will its highest goal in all its endeavours. [This dark remark reflects views of Kant's about reason's link with freedom, and freedom's link with morality.]

But metaphysicians have always suffered the misfortune of not being understood by anyone, and this is what happened to Hume. It really hurts to see how totally Hume's opponents - Reid, Oswald, Beattie, and finally Priestley too - missed the point of his problem. They kept taking for granted things that he had called into question, and offered furious and often arrogant demonstrations of things he had never thought of questioning; so they didn't pick up the pointer he had given to an improvement that metaphysics might undergo. In this they failed so completely that at the end of the debate the status quo was still standing: it was as though nothing had happened!

Hume had never cast doubt on the proposition that the concept of cause is proper, useful, and even indispensable for our knowledge of nature; *that* was not in question. What *was* in question was whether reason could think that concept *a priori*. If it could, the concept of causation would be the source of an inner truth - truths coming just from itself, not *from* anything outside it given through experience - so that it could be applied *to* things other than merely the objects of experience. *That* was Hume's problem. He was not challenging our indispensable *need* for the concept of cause, but merely asking what its origin is. If the origin was settled, questions about the conditions governing the use of the concept, and about the domain in which it can be validly used, would automatically have been answered also.

To deal adequately with this problem, however, Hume's opponents would have had to dig deeply into the nature of reason, considered as the faculty of pure thinking: not a job to their taste! They were more comfortable with a different approach, one that let them defy Hume without bringing any insight to his problem, namely by appealing to *common sense*. It is indeed a great gift from heaven to have plain common sense. But this common sense must be shown in practice, through judicious and reasonable thoughts and words, not by appealing to it as an oracle when one has no rational arguments to offer. *Appeal to common sense when insight and science have failed you, but don't appeal to it before then!* - that rule of intellectual conduct is one of the devious inventions of recent times, and it enables a shallow ranter to join battle with a solid thinker, and hold his own. But anyone with a flicker of insight left to him would be careful *not* to grasp at this straw. If you place this appeal to common sense in a clear light, you will see that it is nothing but an appeal to the opinion of the mob - whose applause embarrasses the philosopher but brings joy and reassurance to the popular smart alec. I should think that Hume had as much claim to sound common sense as Beattie did, and he also had something that Beattie lacked, namely a *critical reason* that restrains common sense so that it doesn't speculate or, if speculations are the topic of discussion, it doesn't crave for any decision when it isn't satisfied that it has the arguments to support one. This is the only way someone's common sense can remain sound. Chisels and hammers can serve very well in working wood, but for copperplate we need an engraver's needle.

Thus sound common sense and speculative understanding are both useful, but each in its own way: the former serves in judgments that apply immediately to experience, the latter comes into play when universal judgments from mere concepts are to be made, as in metaphysics. In the latter environment sound common sense has absolutely no right to judge.

Here is an open confession about something that happened many years ago: it was my recollection of the thought of David Hume that broke into my dogmatic slumber, and pointed my work in speculative philosophy in a completely new direction. I was nowhere near accepting his *conclusions*. He had reached them by looking at only a part of his problem - a part that by itself can give us no information. Still, if we start from a well-founded but undeveloped thought that someone else has left to us, we can hope that by continuing to think it through we shall get further than did the brilliant man to whom we owe the first spark of light.

So I tried first to see whether Hume's objection could be put into a general form, and I soon got a result:

The concept of *the cause-effect connection* is far from being the only idea by which the understanding has *a priori* thoughts about the connections of things. On the contrary, metaphysics consists purely of such concepts - that is, concepts of the connections of things.

I tried to find out how many such concepts there are, and succeeded in this in the desirable way, namely by starting from a single principle. Then I proceeded to the deduction of these concepts, which I was now certain did not come from experience (which is all that Hume provided for them) but rather from pure understanding. [By the phrase 'the deduction of these concepts' Kant refers to a *theoretically grounded and justified list of the concepts in question* - something that proves and explains why the metaphysical concepts of the connections of things are just exactly the ones on the list.] This deduction had seemed impossible to Hume; and apart from him nobody had even *thought* of it, although everyone had confidently used the metaphysical concepts, without asking what their objective validity was based on. The deduction was the hardest task that anyone could tackle in the service of metaphysics; and the worst of it was that I could get no help from metaphysics as it then was, because this deduction is what's needed to make metaphysics possible. But despite not having the help of metaphysics I *did* succeed in solving the Humean problem, not merely for a particular case of the cause-effect connection but with respect to the whole faculty of pure reason. With that done, I could safely - though always slowly - go on to map out the whole domain of pure reason, establishing its boundaries and its contents. I did all this completely, and from general principles, which is what metaphysics needed if its system was to be securely built.

I expounded the Humean problem in its most general possible form in my book *Critique of the Pure Reason*; but I am afraid that that work may go the same way as the problem did when Hume first propounded it. The book will be misjudged because it is misunderstood; and people will misunderstand it because they are inclined to skim through the book rather than *thinking it through*. That is admittedly a disagreeable task, because the work conflicts with all ordinary concepts, as well as being dry, obscure, and long-winded! Despite those drawbacks, I confess that I didn't expect to hear a *philosopher* complain that the book is not a crowd-pleaser, not entertaining, not an easy read, given that what is at issue in it is no less than the existence of a highly prized and indispensable kind of knowledge - a question that *cannot* be settled except by working strictly according to rule and with great precision. Such work might in the course of time please the crowd; but a concern for popularity is quite inappropriate at the start. Still, one of the complaints is justified: the book's plan is diffuse, making it hard for the reader to keep in mind the

chief points of the investigation; and that contributes to a certain obscurity. I intend to remedy that with these *Preliminaries*.

The earlier work, which maps out the entire faculty of pure reason, will be the foundation to which the *Preliminaries* are to be related. But the latter work - the book you now hold in your hands - is only a preparatory exercise and not a contribution to metaphysics itself; because we can't think of letting metaphysics appear on the scene, or even have a faint hope of attaining it, until our critique has been established as a science that is complete in every detail.

We have long been used to seeing dreary old knowledge spruced up as new by being taken out of its former context and turned into a system in fancy new clothing with new terminology; and that's all that most readers will initially expect my critique to be. But these *Preliminaries* may help the reader to see that it is not old stuff in new clothes, but a wholly new science that no-one has ever thought of - indeed, the very *idea* of which was unknown - and to which no previous work has made the slightest contribution. The only exception to that is the pointer one could get from Hume's doubts; but even he didn't suspect there could be such a possible formal science; instead, he played safe by running his ship onto the shore (scepticism), letting it lie there and rot. I prefer to give the ship a *pilot* who can safely sail it anywhere he likes, by means of secure principles of navigation drawn from a knowledge of the globe, and equipped with a complete chart and compass.

Suppose we are confronted by a new science that is wholly isolated and the only one of its kind. If we start with the assumption that we can make judgments about it in terms of knowledge that we have already gained - which is precisely what has first to be called in question when considering a new science - all we shall achieve is to see everywhere things we already know, with the words sounding familiar but everything seeming (so far as the content is concerned) to be pushed out of shape, senseless, gibberish. That is because we'll be relying on our own notions, which long habit has made second nature for us, instead of relying on the author's. But the longwindedness of the work, to the extent that it comes from the science itself and not merely from the exposition, as well as the unavoidable dryness and by-the-rules precision, are qualities that can bring credit to the science - though not to the book!

It is not given to many of us to write with the subtlety and grace of David Hume, or with the solidity and elegance of Moses Mendelssohn. Yet I flatter myself that I could have written in a crowd-pleasing way if my aim in the *Critique of Pure Reason* had been merely to outline a plan and leave it to others to complete, rather than having set my heart on the good of the science that had occupied me for so long. Indeed it took a lot of perseverance and a good deal of self-denial to put the prospect of later but more lasting applause ahead of the enticements of an immediate success.

The *making of plans* is often an arrogant and boastful activity, through which someone gives himself airs as a creative genius by demanding what he doesn't himself supply, finds fault with what he can't improve, and makes proposals that he himself doesn't know how to carry out - though a sound plan for a *general critique of pure reason*, if it is not to amount only to the usual spouting of pious hopes, will have to have more content than one might expect. But the domain of pure reason is so separate from everything else, and so inter-connected within itself, that we can't lay a finger on one part without affecting all the others, and can't build anything there without first determining

where each part is and how it relates to the rest. That is because our judgment  $\dot{Y}$ within this domain can't be corrected by anything  $\dot{Y}$ outside it, and so the validity and use of every part of the domain depends on how it relates to all the rest - just as with the structure of an organism we can work out the purpose of each part only from a full conception of the whole. So it can be said that  $\dot{Y}$ such a critique shouldn't be trusted unless it is *perfectly complete*, down to the smallest elements of pure reason, and that  $\dot{Y}$ in the domain of reason you must settle everything - or you will settle nothing.

As for a mere plan or sketch of the critique of pure reason: its usefulness as a *sequel* to the critique is a measure of how useless - how unintelligible and unreliable - it would be if given *in advance*. Taken as a sequel, it gives us a vantage-point from which we can take in the whole thing, can test - one by one - the chief points of the science, and can make the exposition of it much better than it was the first time around.

[In the next paragraph Kant uses 'analytic' and 'synthetic' to mark a distinction between two *methods of presentation* of some doctrine. An  $\dot{Y}$ analytic presentation starts with things we all know to be true and works its way from those to the theory or doctrine that explains and is supported by them. A  $\dot{Y}$ synthetic presentation goes in the opposite direction: it starts with the fundamental theses of the doctrine to be expounded, and works from those to various of their consequences, which could include the things-we-already-know that are the *starting-point* for the analytic format. This use of 'analytic' and 'synthetic' occurs *only* here and on pages 16-17 and 75. Everywhere else in this work and throughout the *Critique of Pure Reason* Kant uses the terms in an utterly different sense, in which it distinguishes not  $\dot{Y}$ expository methods but  $\dot{Y}$ kinds of proposition. *This* use of the terminology is the one that is still current; Kant explains it in section 2 below.]

With my critique of pure reason completed, I now offer a plan of it as a sequel. The plan is to be laid out in the  $\dot{Y}$ analytic manner, whereas the critique itself had to be composed in the  $\dot{Y}$ synthetic style so that readers could command a view of all the *joints* of the science - the natural hanging-together of the structural parts of 'pure reason', an utterly special cognitive faculty. But if you also find *this* too obscure - this plan that I offer as the *Preliminaries to any future Metaphysic* - bear in mind  $\dot{Y}$ that it's not necessary for everyone to study metaphysics,  $\dot{Y}$ that many people have the aptitude to succeed very well in sciences (even deep ones) that are closer to sense-experience, yet can't succeed in investigations dealing with highly abstract concepts,  $\dot{Y}$ that such people should employ their talents on other subjects;  $\dot{Y}$ that someone who undertakes to make judgments in metaphysics - let alone to construct a metaphysical system - must *satisfy* the demands I have made here, which he can't do by *rejecting* them, so he must either adopt my solution or thoroughly refute it and put another in its place; and, finally,  $\dot{Y}$ that this notorious obscurity ('allegations of which are' often a cloak to cover the accuser's laziness or stupidity) also has its uses 'as a defence against insolent intruders. There is no shortage of *them* in metaphysics!'. People who maintain a cautious silence in relation to other sciences approach metaphysics in a spirit of bold pronouncements and snap judgments, because in this area their ignorance is not contrasted with the knowledge of others.

## PREAMBLE ON THE DISTINCTIVE CHARACTERISTICS OF ALL METAPHYSICAL KNOWLEDGE

### Section 1: The sources of metaphysics

If a field of knowledge is to be exhibited as a science, we need to know exactly what features are special to it, marking it off from all other sciences. Otherwise the boundaries of all the sciences run into one another and none of them can be treated soundly according to its own nature. Our idea of a possible science and of the territory it covers is based on its special features - whether they have to do with its subject matter, or its sources of knowledge, or the kind of knowledge it involves, or of some or all of these together.

Let us consider first the *sources* of metaphysical knowledge. The very concept of metaphysics ensures that the sources of metaphysics cannot be empirical. If something could be known through the senses, that would automatically show that it doesn't belong to metaphysics; that is an upshot of the meaning of the word 'Metaphysics'. Its basic propositions can never be taken from experience, nor can its basic concepts; for it is not to be physical but metaphysical knowledge, so it must lie beyond experience. Outer experience is the source of physics properly so-called, and inner experience is the basis for empirical psychology; and metaphysical knowledge cannot come from either of these. It is thus knowledge *a priori* - knowledge out of pure understanding and pure reason.

Mathematics also answers to that description. To demarcate metaphysics from mathematics as well as from empirical enquiries, we shall have to call it *pure philosophical knowledge*. In this phrase, 'pure' means 'not empirical'; and 'philosophical' stands in contrast to 'mathematical'. The difference between these two ways of using reason - the mathematical and the philosophical - is something I needn't go into here; I have adequately described it in my *Critique of Pure Reason*. So much for the sources of metaphysical knowledge.

### Section 2: The only kind of knowledge that can be called metaphysical

(a) *The distinction between synthetic and analytic judgments in general.*

Because of what is special about the sources of metaphysical knowledge - namely, that they do not include experience - all such knowledge must consist in judgments that are made *a priori*. However, *a priori* judgments can be divided into two groups, according to their content: (a) those that merely spell out what is already there, adding nothing to the content of the knowledge, and (b) those that add something, and enlarge the given knowledge. We can call (a) *analytic* judgments, and (b) *synthetic*.

Analytic judgments say nothing in the predicate that was not already thought - though less clearly - in the concept of the subject. If I say 'All bodies are extended', I haven't added anything to my concept of body, but have merely analysed it. Extension was already implicitly thought of in the concept of *body*, before I made the judgment. So the judgment is analytic. On the other hand the proposition 'Some bodies are heavy' contains something in the predicate that is not thought - even unclearly or implicitly - in the concept of *body*. It thus enlarges my knowledge in that it adds something to my concept, and hence must be called a synthetic judgment.

(b) *The common principle of all analytic judgments is the law of contradiction.*

All analytic judgments rest wholly on the law of contradiction. The predicate of an affirmative analytic judgment has already been thought in the concept of the subject, so it can't be denied of the subject without contradiction. This is the case with the proposition 'Every body is extended'. That is equivalent to something of the form 'Everything that is . . . and extended is extended', so that to deny it would be to say that something is . . . and extended and not extended, which is an outright contradiction. The law of contradiction, which says that no contradiction is true, thus underlies the truth of the analytic proposition that all bodies are extended.

So all analytic propositions are *a priori* judgments, even those which contain empirical concepts as does the judgment 'Gold is a yellow metal'. I must have experience if I am to have the concepts of gold, of yellow, and of metal; but to know that gold is a yellow metal I need no further experience; all I need is to analyse my concept of *gold*, which contains the concept of *being a yellow metal*.

(c) *Synthetic judgments need a different principle from the law of contradiction.*

Some synthetic judgments have an empirical origin, and can be known only *a posteriori*; other synthetic judgments have *a priori* certainty, and originate in pure understanding and reason. No synthetic judgment can come from the law of contradiction alone. Such judgments must *conform* to that principle (which is just to say that they mustn't be self-contradictory), but they cannot *be deduced* from it.

In the rest of this section four kinds of synthetic judgment will be identified and discussed. Although they are all synthetic - meaning that none of them can be established merely by analysing concepts - three of the four kinds can be learned *a priori*.

(1) *Judgments of experience* are always synthetic. It would be absurd to base an analytic judgment on experience: why go to experience when the judgment can be derived purely from my concept? That every body is extended is a proposition that holds *a priori*, and not a judgment of experience. For before I look to experience I already have in the concept of body all that I need for my judgment: I need only to extract the predicate ('extended') from that concept according to the law of contradiction. In doing that, I also become conscious of the *necessity* of the judgment - and that is further evidence that this analytic judgment is not based on experience, because experience can never teach me that something is necessary.

(2) *Mathematical judgments* are all, without exception, synthetic. This is certainly true and is very important, but it seems to have escaped the notice of all previous analysers of human reason, and indeed to be directly opposed to all their theories. Those earlier thinkers saw that all the inferences of mathematicians proceed *according to* the law of contradiction, and wrongly slipped into thinking that mathematical truths were known *from* the law of contradiction. This was a great mistake. The law of contradiction can lead one to a synthetic proposition, but only *from* another synthetic proposition. (Still, it must be borne in mind that mathematical propositions are always *a priori* judgments, not empirical ones. They carry necessity with them, and that cannot be learned about from experience. If you disagree, I shan't argue; I shall merely make this claim about the propositions of *pure* - that is, non-empirical - mathematics!)

One might think that the proposition  $7 + 5 = 12$  is analytic, and that it follows according to the law of contradiction from the concept of the sum of 7 and 5.

But if we look more closely, we find that the concept of the sum of 7 and 5 contains only the uniting of 7 and 5 into a single number; and in thinking this we do not have the least thought of what this single number is in which the two are combined. I can analyse my concept of the uniting of seven and five as long as I please - I shall never find 12 in it. I have to go outside these concepts and - with the help of an intuition that corresponds to one of them (my five fingers for instance) - add the 5 given in intuition to the concept of 7, adding them one by one. Thus we really amplify our concept by this proposition  $7 + 5 = 12$ , and add to the first concept a new one that was not thought in it. That is to say, *arithmetical propositions are always synthetic*. It will be easier to grasp this if we take larger numbers. It is obvious that however we might turn and twist our concept of

the sum of 38976 and 45204

we could never find 84180 in it through mere analysis, without the help of intuition.

[Kant's use of the term 'intuition' needs to be explained; the explanation will occupy five paragraphs. Traditionally, the word has had two meanings. In one it contrasts with 'demonstration' - you know something intuitively if it is immediately self-evident to you, whereas demonstrative knowledge involves a series of deductive steps. In the other meaning - which alone is relevant to Kant - our faculty of 'intuition' is our ability to be mentally confronted by individual things, to have in our minds representations of *the things* and not merely of certain *features or properties* of them. Kant uses 'intuition' to stand not just for the faculty but also for the mental representations that it involves. Thus, for example, when you see the Lincoln Memorial you have *an intuition* of it, and this is an exercise of your *faculty of intuition*. That intuition is a 'sensible' one, meaning that you get it through your senses. It stands in contrast with a *concept* of the Lincoln Memorial - such as the concept or abstract thought of a large white memorial to a great American statesman. Having in your mind a (conceptual) representation of a large white memorial etc. is quite different from having in your mind an (intuitive) representation of the Lincoln Memorial, that one particular individual object.

[Now, Kant holds that we are also capable of having in our minds intuitions that do not come from the senses; he calls them 'pure' or '*a priori*' intuitions. When in the previous paragraph he speaks of the intuition of my five fingers, that is a sensible intuition: I feel or look at the fingers. But he believes - as we shall see in section 7 - that pure mathematics involves pure intuitions: for example, a geometer works out the properties of circles not by merely taking the abstract concept *circle* and analysing it, but by somehow giving himself a pure intuition of a circle, and working out the properties of all circles from that. This is something like imagining-a-circle, but it is not ordinary imagination, which is copied from sense experience.

[The basic idea is something like this: Every time you see or feel something circular, various aspects of your mental state are contributed by the sensations that come from outside you, and others are contributed by your understanding, i.e. the concept-using faculty. If all of that were somehow stripped off, what would be left is a very thin, abstract

intuition of *the circular thing* just as *a circle*. That is, nothing would be left of it but its purely spatial or geometrical properties; they will be the same for every circular thing; so the stripped down intuition will be the same in each case. That stripped down intuition is what Kant calls a 'pure intuition' of a circle. According to him, this is not contributed by sensation from outside you; rather, it is conferred on your mental state by your own mind, specifically by your own faculty of sensible intuition. You are so built, he thinks, that you have to experience the world outside yourself *as spatial*, not because the outer world is spatial but because you impose spatiality on the intuitions you have of it. Kant puts this, sometimes, by saying that what is represented in a pure intuition is the *form* of your sensibility or of your sensible intuition.

[For the geometer to establish synthetic truths about circles, Kant holds, he must not only have the concept *circle* but must also have a pure intuition of a circle. This pure intuition, he sometimes says, *exhibits* the concept; it illustrates or exemplifies it; it shows the geometrician what a circle is, taking him from the merely conceptual *thought* of circles to a kind of abstract non-sensory *view* of a circle.

[The same story can be re-told about the perceptions of events: strip off everything empirical, and everything conceptual, and you are left with a mere, bare, pure intuition of time. As space is a form of your sensibility in experiencing things outside yourself, time - Kant thinks - is a form of your sensibility in relation not only to things outside you but also to the flow of your mental history. Just as geometry is based on pure intuitions of space (or of spatial figures), Kant says, arithmetic is based on pure intuitions of time; see section 10. End of explanation. We now return to Kant's text.]

Nor is any principle of pure geometry analytic. That a straight line is the shortest path between two points is a synthetic proposition. For my concept of straightness contains nothing having to do with quantity - it is purely a qualitative concept - so it cannot contain the thought of what is *shortest*, because that is quantitative. Here again, we need help from intuition if we are to have a basis for putting *shortest* together with *straight*.

Why are we so prone to believe that in such a necessary judgment the predicate is already contained in our concept so that the judgment is analytic? The source of this mistake is a certain ambiguity. We ought to join in thought a certain predicate ('shortest') to a given concept ('straight'), and this requirement is inherent in the concepts themselves. But the question is not what we *ought to think along with* the given concept but what we *do think in* it, even if unclearly. Once we distinguish those two ideas, we can see that while the predicate is indeed attached to the subject concept necessarily, it is *attached* only by means of an intuition that must also be present; it is not to be found *in* the subject concept itself.

Some other principles that geometers use are indeed really analytic and rest on the law of contradiction: for example 'Everything is equal to itself', and 'The whole is greater than its part'. These identical propositions can be useful in setting out arguments, but they don't actually say anything; they can be useful methodologically, but they don't contribute to the content of what is said. Furthermore, even these analytic propositions, though they are indeed validated purely by our concepts, wouldn't be allowed into mathematics if they couldn't be illustrated by propositions that are connected with intuition. For example, 'The whole is greater than its part' is allowed into mathematics because it can be applied to numbers, areas and lengths, which are given to us in intuition.

Pure mathematical knowledge differs from all other *a priori* knowledge in this: it never proceeds *from* concepts, but is always achieved by *construction of* concepts. Mathematical propositions must therefore go beyond the *concept* to what the corresponding *intuition* contains, because this intuition guides the construction of the concept; hence they cannot and should not come from the analysis of concepts, and are therefore one and all synthetic.

This may seem a small and unimportant point; but the neglect of it has done harm to philosophy. Hume had the worthy philosophical aim of surveying the whole field of pure *a priori* knowledge - a field in which the human understanding lays claim to great possessions - but he carelessly sliced off a large part of the territory, its most considerable province, namely pure mathematics. He thought that mathematics rested on the law of contradiction alone. Although he did not classify propositions in quite the way that I do here, or with the same names, he *in effect* said: Pure mathematics contains only analytic propositions, but metaphysics contains *a priori* synthetic propositions. Now this was a great mistake, which infected his whole system of thought. If he had not made this mistake, he would have taken his question about the origin of our *a priori* synthetic judgments to cover not only metaphysics (e.g. the concept of causality) but also mathematics. He had too much insight to base mathematics on mere experience, so if he had likened metaphysics to mathematics in the way I have been defending, he would have spared metaphysics from that fate. Metaphysics, by being in the good company of mathematics, would have been saved from the danger of the vile mistreatment that Hume actually gave to it; and then, fine thinker that he was, he would have been drawn into lines of thought like those that I am now offering - though he would have presented them in his own uniquely elegant style.

(3) *Natural science* also contains synthetic judgments that can be known *a priori*, for example:

In all changes in the physical world the quantity of matter remains unchanged.

When one body collides with another, action and reaction must always be equal.

Clearly these are not only necessary and *a priori* in origin but are also synthetic. I shall show this of the first of them. It says that the total amount of matter in the universe never changes, which is to say that matter is *permanent*. Now, in thinking the concept of matter I do not think its permanence but only its presence in the space that it fills. Thinking that matter is permanent is not like thinking that women are female, or that tigers are animals. In judging that matter is permanent, therefore, I go beyond the concept of matter in order to add *to* it something that I did not think *in* it. So the proposition is not analytic but synthetic; yet it is thought *a priori*, as are the other propositions of the pure part of natural science - the 'pure' part being the part that owes nothing to experience. [This paragraph on natural science is brought across from the *Critique of Pure Reason*. There is evidence that Kant intended such a paragraph to occur here, and omitted it by accident.]

(4) *Properly metaphysical* judgments are all synthetic. The whole aim of metaphysics is to arrive at conclusions that are synthetic. Analytic judgments are also involved, but only as aids to constructing arguments; what metaphysics, properly so-called, is really about is the establishment of conclusions, which are always synthetic. If a concept (such as that of substance) belongs to metaphysics, then the analytic judgments that analyse this

concept also belong there - for example the judgment that substance is that which exists only as subject etc. - and a set of such judgments can be used to work towards a definition of the concept in question. But such a judgment belongs to metaphysics only because the analysed concept does; the process of analysis is just the same as we use when analysing empirical concepts that don't belong to metaphysics. The only judgments that are really strictly metaphysical are synthetic ones.

When the *a priori* concepts that are the building-bricks of metaphysics have been gathered together in a systematic way, the analysis of them is of great value. The analytic judgments that are arrived at in this way can be separated out from the rest of metaphysics, and presented as a separate part of the whole system. The only use that these analyses have in metaphysics is as a useful preliminary to the procedure of arriving *a priori* at synthetic propositions involving the concepts that have been analysed.

The upshot of this section is that metaphysics is centrally concerned with *a priori* knowledge of synthetic propositions. These are what metaphysics is for. We are helped to arrive at them by analyses and analytic judgments - indeed, ones using the very same process of analysis as we do when trying to clarify our concepts in other branches of knowledge. But the essential content of metaphysics is the *generation* of knowledge *a priori*, both according to intuition and according to concepts, leading ultimately to synthetic propositions *a priori* - philosophical knowledge.

### Section 3: A note about the analytic/synthetic distinction

The distinction between analytic and synthetic is essential in the present kind of enquiry into the human understanding; it is not much use anywhere else, so far as I know. The reason why dogmatic philosophers overlooked this apparently obvious distinction is that they did not look for the sources of metaphysics in the pure laws of reason in general - and so they did not see how metaphysical truths could be known *a priori* and yet be synthetic. [By 'dogmatic' philosophers Kant means, broadly speaking, ones who plunge ahead doing metaphysics without first raising the question of how - or indeed whether - metaphysics is possible.] Thus two recent German philosophers tried to derive the law of sufficient reason, which is obviously synthetic, from the law of contradiction. [The law of sufficient reason says that there is a reason for everything that is the case, i.e. that there is a correct answer to every 'Why?'-question.] Still, there is a hint of this distinction in Locke's *Essay* at IV.iii.9ff. Having previously discussed the different kinds of judgments and how we arrive at them, including

judgments of 'identity or contradiction' (which are analytic), and  
judgments of 'co-existence' (which are synthetic),

he admits that our *a priori* knowledge of the latter is very narrow and almost nothing at all. Grudging as that is, it does at least admit the *possibility* of *some* synthetic *a priori* knowledge. But what he says of this kind of knowledge is so skimpy and unsystematic that it's not surprising that it didn't prompt anyone - and in particular didn't prompt Hume - to consider propositions of this kind. It is hard to learn universal and yet definite truths from someone who only had them floating obscurely before him in his thought. One needs to discover them for oneself, in one's own thinking; *then* one can find them elsewhere, where one would certainly not have found them before because the authors were not clear in their own minds about what they were saying. That is how I found the

analytic/synthetic distinction in Locke's pages when Hume did not find it there: the crucial point is that I had first worked out the distinction for myself.

#### **Section 4: The general problem of the *Prolegomena*: is metaphysics possible at all?**

If we had a real metaphysics that could claim to be a science - if we could say 'Here is metaphysics, all you have to do is to learn it, and it will convince you of its truth' - then we would not have to ask whether metaphysics is possible, just as we don't have to ask whether geometry, say, is possible. Our only question would concern *how* it is possible, and how reason should set about doing metaphysics; and this would be a test of our mental skills, not a challenge to the existence of the thing itself.

However, things haven't turned out so well for human reason. There is no single book that one can point to, as one might hold up a Euclid, and say, 'This is metaphysics; here you will find knowledge of a highest being and of a future world, which is the noblest aim of this science, proved from principles of pure reason.' Many propositions have been agreed without dispute to be necessary and certain, but they are all analytic, and concern the materials and building-stones of metaphysics rather than the enlargement of our knowledge. You may point to some synthetic propositions (e.g. the law of sufficient reason) which are widely accepted, though you have never proved them through mere reason, *a priori*, as you ought to have. Help yourself to them; but when you want to use them for some serious purpose you will find yourself caught up in wrong or dubious assertions - the sort of thing that has set metaphysical systems against one another in their doctrines or in their arguments, destroying their claims to be believed.

Indeed, the very attempts to create a science of metaphysics were the first cause of early scepticism - a way of thinking in which reason attacks itself so violently that it could never have arisen except in complete despair about our ability to carry out reason's most important designs. Men began to investigate reason itself long before starting methodically to investigate nature in the physical sciences. Even at that stage, reason had already been employed in connection with ordinary experience; and reason is always present to us, whereas laws of nature have to be laboriously sought out. So metaphysics floated to the top like foam, which dissolved the moment it was scooped off. But as soon as one lot of foam dissolved, more came frothing up to the surface. Some philosophers eagerly collected foam; some tried to show their wisdom by ridiculing the vain efforts of others; none looked for the cause of the foam down in the depths.

We are tired of dogmatism that teaches us nothing, and just as tired of scepticism that promises us nothing (not even permission to rest comfortably in ignorance). The knowledge we need is important, and that is a challenge to us; but we have had centuries of bad experience with things we thought we knew through 'pure reason' that turned out not to be knowledge at all, and that makes us suspicious. So we are under pressure to push on forwards, and also nervous about doing so. Where do we go from here? That depends on the answer to the question 'Is metaphysics possible at all?' We should try to answer this not by picking away sceptically at particular doctrines of this or that actual system of metaphysics - for we don't yet admit that there *are* any systems of metaphysics - but by considering the *concept* of such a science.

In the *Critique of Pure Reason* I tackled this problem by looking into pure reason itself: by establishing the nature of reason, I was able to work out what its materials and

methods must be. This is hard to do. It demands a reader who is resolved to think himself gradually into a system based on reason itself and on nothing else, aiming to develop knowledge out of that alone, without help from any fact. Because the present work is called *Preliminaries*, on the other hand, it ought to consist of preliminary exercises; they should aim not to expound the science itself but rather to show what is needed for the science to be brought into existence. Preliminaries should try to get help from something that is already known to be reliable, from which one can confidently work back to the ultimate sources that are not yet known.

Although we can't take it for granted that there is any such science as metaphysics, we can - fortunately - say with confidence that some pure synthetic *a priori* knowledge is real and that we already have it. I refer to *pure mathematics* and *pure natural science*. Each of these contains propositions that are everywhere recognized - partly through reason that shows them to be necessary and certain, and partly through universal agreement arising from experience (though not actually based on experience). So we have some *a priori* synthetic knowledge that is, at least, unchallenged; we don't have to ask whether such knowledge is possible (for it is real), but only *how* it is possible. When we can answer that, we shall know how to go about showing the possibility of all other kinds of synthetic *a priori* knowledge.

### **Section 5: The general problem: how can there be knowledge based on pure reason?**

We have seen the vast difference between analytic and synthetic judgments. It is easy to see how there can be

analytic propositions:

they come purely from the law of contradiction. There is also no special problem about how there can be

synthetic propositions that are known *a posteriori*,

that is, known from experience: experience itself is nothing but a continual joining together of perceptions, so it is not surprising that it enables us to join concepts in a synthetic way. Returning to an example used earlier, the synthetic proposition that *some bodies are heavy* can be established through experiences in which perceptions of body are joined with perceptions of weight. What we do have a problem about is the possibility of

synthetic propositions that are known *a priori*.

Whatever makes this sort of knowledge possible, it is not the law of contradiction and it is not experience, so we must search to find out what it is.

But we cannot rightly start by asking *whether* synthetic *a priori* propositions are possible. For there are plenty of them, really given to us with undisputed certainty; and as our present procedure involves starting with what we already know, we shall start from the premise that there is human *a priori* knowledge of some synthetic propositions. But then we still have to ask *how* this knowledge is possible, that is, what makes it possible. When we know that, we can learn how to use such knowledge and can learn what its limits are. Stated precisely, then, the crucial question is this:

*How is it possible to have a priori knowledge of synthetic propositions?*

I have sometimes expressed this as a question about knowledge 'out of pure reason'. That is just another way of asking the same thing. When I speak here of knowledge out of pure

reason, I always mean knowledge of synthetic propositions, never of analytic ones; and of course knowledge through pure reason is always *a priori*. [At this point Kant has a footnote commenting on the shift from the old senses of ‘analytic’ and ‘synthetic’ (explained on page 7 above) to his new senses for those terms.]

Metaphysics stands or falls with the solution to this problem. Someone may propound his metaphysical claims as plausibly as he likes, smothering us with conclusions piled on conclusions; but if he hasn’t first answered this question properly, we are entitled to say to him: ‘This is all pointless ungrounded philosophy and false wisdom. You purport to be using pure reason to create *a priori* knowledge, not by merely analysing concepts but by making new connections that don’t rest on the law of contradiction; and you think you have insight into these connections independently of all experience. But how do you get such insight? How can you justify your claims?’ He cannot answer by appealing to the common sense of mankind, for that is not evidence - it is mere hearsay. . . .

The question must be answered, but that is difficult to do. One reason why an answer wasn’t attempted long ago is that a satisfactory answer to this one question demands much deeper, more persistent and more careful thought than goes into the most lengthy and ambitious metaphysical works ever published. (A weightier reason is that nobody thought to ask the question!) Every reader who looks hard at the problem will initially be frightened by its difficulty. Indeed, if it were not that there really is synthetic *a priori* knowledge, the thoughtful person would think such knowledge to be impossible. This is what happened to David Hume, although he didn’t put the question to himself in this general form (which is the form we need if we are to get an answer that is decisive for the whole of metaphysics). Hume asked an intelligent question: How can I arrive at a judgment in which one concept is connected *necessarily* with another, even though the one does not contain the other? He thought it couldn’t be done; which led him to conclude that only experience can provide us with such connections. In other words, he thought that this supposed necessity (which is the same as this supposed *a priori* knowledge) is merely a long-standing *habit* of accepting something as true, and hence of taking *Ÿa* necessity in our thought - a mere mental compulsion - to be *Ÿa* necessity in the world.

If you want to complain about the toil and trouble that I am going to give you in solving this problem, I invite you to try solving it in an easier way! Perhaps that will make you grateful to the man who has taken this deep task over for you, and you may even come to be surprised - given how difficult the problem is - that the solution is not even harder than it is. I have had to work for many years to solve this problem in its full scope - that is, covering all the cases - and finally also to be able to present it in the analytic form, as you will find it here. [This is the old sense of ‘analytic’, explained on page 7.]

All metaphysicians are therefore solemnly and legally suspended from their business until they have satisfactorily answered the question: How is *a priori* knowledge of synthetic propositions possible? Only an answer to this will provide them with the credentials they must produce if we are to credit them with teaching us things in the name of pure reason. If they can’t produce those credentials, we - as reasonable men who have often been deceived - should flatly refuse to listen to them, without asking any more about what they are offering.

They may want to carry on their business not as *science* but as an *art* of swaying people with pronouncements that are good for them and agreeable to ordinary common

sense. They are entitled to ply this trade; but then they should speak the modest language of rational belief, admitting that they must not claim to know - and should not even conjecture - anything about what lies beyond the bounds of possible experience. The most they can legitimately do is to assume things; and even then they are not making assumptions for theoretical purposes (for they must renounce those), but solely for practical use, assuming whatever is needed to guide our thought and behaviour in everyday life. That is their only chance of being useful and wise. It will be better, too, if they give up the name 'metaphysician'; for metaphysicians, properly so-called, aim to be theoretical philosophers; they try to establish judgments *a priori*, which means necessary judgments; so they can't fool around with conjectures. What they assert is science or it is nothing at all.

[paragraph omitted]

In now proceeding to the answer to the question 'How is *a priori* knowledge of synthetic propositions possible?', according to the analytic [old sense] method, in which we presuppose that such knowledge through pure reason is real, we can appeal to only two sciences, namely *pure mathematics* and *pure natural science*. Only these can represent objects to us in intuition. If one of them should yield an item of *a priori* knowledge, it could show that this knowledge is real by showing that it fits with the intuited object; and we could then work back from the reality of this knowledge to whatever it is that makes it possible.

In order to move on from these kinds of pure *a priori* knowledge, which are both real and grounded, to the possible kind of knowledge that we are seeking, namely to metaphysics as a science, we must take our question a little more broadly. As well as enquiring into the possibility of metaphysics as a science, we must also investigate the natural human disposition to pursue such a science. That involves looking into the *a priori* thoughts that are uncritically accepted, developed, and called 'metaphysics'. The truth of such thoughts is under suspicion, but the thoughts themselves are natural enough; they fall within the scope of our question because they involve the natural conditions out of which metaphysics arises as a science.

So our main problem splits into four questions, which will be answered one by one:

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

It may be seen that the solution of these problems, though chiefly designed to present the core of the *Critique*, also has an odd feature that is worth attending to separately. We are looking to reason itself for the sources of certain sciences, doing this so that from its performance we can assess *reason's* powers as a faculty of *a priori* knowledge. This procedure also brings benefit to those sciences, in respect not of their content but of their proper use; and they throw light on the higher question about their common origin, while also giving an occasion better to explain their own nature.

**FIRST PART OF THE MAIN TRANSCENDENTAL PROBLEM:  
How is pure mathematics possible?**

**Section 6**

Mathematics is a great and proved field of knowledge; it already has a large scope, and there is no limit to how far it can be extended in the future; and its results are absolutely necessary and certain, which means that they owe nothing to experience. Mathematical propositions are pure products of reason, yet they are thoroughly synthetic. How can human reason create such knowledge wholly *a priori*? Does not our mathematical faculty, which isn't and can't be based on experience, presuppose some basis for *a priori* knowledge? This basis must lie deeply hidden, but we might be able to discover it through its effects - that is, through our mathematical knowledge - if we can only track down the sources of that knowledge.

**Section 7**

We find that all mathematical knowledge has this special feature: it must first exhibit its concept in intuition, doing this *a priori* in an intuition that is not empirical but pure. [See the explanation of 'pure intuition' on pages 10-11.] Without resorting to *a priori* intuitions, mathematics cannot take a single step. So its judgments are always *intuitive*. (In contrast with philosophy, which has to be satisfied with *conceptual* judgments. Philosophy may *illustrate* its necessary doctrines *through* intuition, but can never *deduce* them *from* it.) This fact about mathematics points us to the absolutely basic thing that makes mathematics possible, namely that it is grounded in *pure intuitions* in which it can *construct* all its concepts - that is, can represent them in a manner that is *concrete* rather than abstract, and *a priori* rather than empirical. If we can discover this pure intuition and what makes it possible, we will then be able to explain how there can be synthetic *a priori* propositions in pure mathematics, and thus how mathematics itself is possible. Empirical intuition provides us with experiences that enable us to connect concepts with other concepts, forming *a posteriori* judgments that are empirically certain. Pure intuition also lets us connect concepts with other concepts, but in their case the synthetic judgment is *a priori* certain and necessary, not merely empirically certain. Empirical judgments contain only what we *happen* to have encountered in *empirical* intuition, whereas mathematical judgments contain what *must* necessarily be met with in *pure* intuition. The plates or coins or moons that I happen to have seen or felt may be significantly unlike the ones that you have encountered; but there cannot be such a difference between my *a priori* intuition of a circle and yours. An *a priori* intuition is inseparably joined with the concept *before all experience*, independently of every particular perception.

**Section 8**

Now we seem to have made the problem worse than ever, for now we have to ask: How can one intuit anything *a priori*? An intuition is a representation of a sort that *ordinarily* depends directly on the presence of the object. There is no problem about an intuition of an object that is present to one at the time, or of an object that has been present at an earlier time and is still remembered. It seems impossible, though, to intuit something *a*

*priori*, without help from any outer stimulus. Such an intuition would have to occur without any object  $\dot{Y}$ being present or  $\dot{Y}$ having been present, to which the intuition could refer; and in that case it couldn't be an intuition - or so it seems. We can form some concepts *a priori*, without being related in any immediate way to an object: we can do this with the concepts that contain only the thought of an object in general, without any detail - for example the concepts of *quantity*, *cause*, and so on. (Though even these have meaning for us only if we use them concretely, applying them to intuitions through which we confront actual instances of quantity and cause in our experience.) But how can an *intuition* of an object precede the object itself?

### Section 9

If our intuition had to represent things *as they are in themselves*, no intuition could ever take place *a priori*; intuition would be empirical every time. Here is why. If an intuition takes place *a priori*, then no object of it is present and given to me; but if the object is not present and given to me, I cannot know what it is like in itself. Actually, even if an object *is* intuitively present to me, it is incomprehensible how I could know a thing as it is in itself, for a thing's properties cannot migrate into my mind. Since I cannot get the thing's own properties into my mind, the most I can do is to have in my mind my representations of them; but that means that I am apprehending the thing not as it is in itself but as I perceive and think about it. Never mind that just now; let us pretend that this *is* possible. My present point is that such an intuition would not take place *a priori*, i.e. before the object was presented to me; for if the object were not present, there would be nothing that connected my representation - my intuition - in any way with that object in particular.

There is only one way to have an intuition that precedes the reality of the object, and thus occurs as *a priori* knowledge. I could have such an intuition if it contained nothing but the *form of my sensibility*. My sensibility is my capacity for being affected by particular real things. Through it I come to have *sensible intuitions*. In any such transaction with an object, the sensibility makes its own contribution; the intuitions that occur in my mind depend not only on  $\dot{Y}$ what the objects are like but also on  $\dot{Y}$ the characteristic marks left on them by my sensibility; these constitute its *form*. The form of my sensibility is available to me in advance of any of the impressions in which I am affected by objects. That is because I know in advance that, whatever my particular experience turns out to be like, it will reflect the form of my sensibility; which is to say that I can know *a priori* that I can intuit objects of the senses only in accordance with this form of sensibility. It follows that there can be - and we can know - propositions that concern merely this form of sensibility, that such propositions are valid for objects of the senses, and that they cannot be applied to anything except objects of our senses.

### Section 10

Thus it is only through the form of sensible intuition [= 'form of sensibility'] that we can intuit things *a priori*. Such *a priori* knowledge, however, concerns objects only as they appear to us through our senses, and not as they may be in themselves. If *a priori* knowledge of synthetic propositions is to be possible, and we are to understand how it is possible, it must be subject to this limitation to how things appear as distinct from how they are in themselves.

Now, space and time are the two intuitions on which pure mathematics grounds all its judgments that present themselves as certain and necessary. Pure mathematics must *construct* its concepts on the basis of pure intuition, that is, the kind of intuition that is conducted *a priori*, with no reliance on the senses. Mathematics cannot proceed analytically by dissecting concepts, but only synthetically; so without pure intuition it cannot take a single step, since only pure intuition provides the material for synthetic *a priori* judgments. Geometry is based on the pure intuition of *space*. Arithmetic forms its own concepts of numbers by successively adding units in *time*. Our representations of space and time are merely intuitions, however, rather than concepts; and here is why. Start with empirical intuitions of bodies and their changes, and strip them of everything empirical - that is, everything you know about through sensation - and what you are left with is space and time. These are therefore pure intuitions. They must be involved in all empirical intuitions, and can never be omitted, because they underlie everything empirical. But just because they are themselves pure *a priori* intuitions, they must be mere forms of our sensibility. They precede all our empirical intuition, i.e. all our perceptions of real objects; through them we can know objects *a priori*, though indeed only as they appear to us and not as they are in themselves.

### Section 11

That solves the problem about how mathematics is possible. Pure mathematics is possible only because it bears on mere objects of the senses. The empirical intuition of such objects is grounded *a priori* in a pure intuition of space and time, and this pure intuition is merely the mere form of our sensibility. It precedes the actual appearance of objects, since it makes it possible for them to appear to us. Objects can appear to us only through our sensibility; and anything we get through our sensibility bears the marks of the form of sensibility. Our *a priori* intuitions don't involve the *content* of the appearance, the element of *sensation* in it, for that belongs to the empirical realm; they involve the *form* of the appearance, namely space and time. If you suspect that space and time are features of things in themselves rather than mere features of how things relate to sensibility, then tell me: How in that case could we know *a priori* - in advance of any experience of things - what the intuitions of space and time must be like? Yet we do know this. There is no problem about this knowledge so long as space and time are taken to be nothing more than formal conditions of our sensibility, and the objects are taken to be merely appearances. For then the pure intuition that embodies the form of sensibility can be understood as coming from *us* - from *our* side of the transaction with objects - which means that it can be had *a priori* rather than empirically.

### Section 12

To clarify and confirm all this, we need only to look at how geometers do (and absolutely must) go about proving that two figures are completely congruent, meaning that one can be replaced at all points by the other. All such proofs ultimately come down to this: *The two figures coincide with each other*; which is obviously a synthetic proposition resting on immediate intuition. This intuition must be given pure and *a priori*, otherwise the proposition couldn't hold as absolutely certain and necessary. If it rested on an empirical

intuition, it would only have empirical certainty, and would mean: *So far as our experience has shown us*, this proposition has held *up till now*. That space has three dimensions, and that no space could have more, is built on the proposition that not more than three lines can intersect at right angles in a point. This proposition can't be shown from concepts, but rests immediately on intuition, and indeed (because it is necessary and certain), on pure *a priori* intuition. That a line can be drawn to infinity, or a series of changes continued to infinity, presupposes a representation of space and time as not bounded by anything; and this can only come from intuition, and could never be inferred from concepts. Thus mathematics is really grounded in pure *a priori* intuitions; they are what enable it to establish synthetic propositions as necessary and certain.

[In this paragraph Kant speaks of a certain 'transcendental deduction' of certain concepts. A 'deduction' is a theoretically grounded or justified *list*; it is 'transcendental' in Kant's main sense of that word if it is based on considerations about what makes some kind of *a priori* knowledge *possible*.] Hence our transcendental deduction of the concepts of space and time - that is, our establishing that whatever is given to us in experience *must* be in space and in time - also explains the possibility of pure mathematics. If we did not have such a deduction, and could not take it for granted that *whatever is presented our senses - whether outer (space) or inner (time) - is experienced by us only as it appears, not as it is in itself*, we could still *do* mathematics but we would have no insight into what it is.

### Section 13

If you can't help thinking that space and time are real qualities attached to things in themselves, try your intelligence on the following paradox. When it has defeated you, you may be free from prejudices at least for a few moments, and then you may be more favourably disposed towards the view that space and time are mere forms of our sensible intuition.

If two things are completely the same in every respect of quantity and quality that can be known about each separately, you would expect it to follow that each can be replaced by the other in all cases and in all respects, without the exchange causing the slightest recognizable difference. That is indeed the case with two-dimensional figures in geometry, but not with three-dimensional ones: it can happen that two of them have a complete inner agreement yet also have an outer relation such that one cannot be replaced by the other. . . . What can be more like my hand, and more equal in all points, than its image in the mirror? Yet I can't put such a hand as is seen in the mirror in the place of its original: for if the original was a right hand, the hand in the mirror is a left hand, which could never serve as a substitute for the other. Here are no inner differences that any understanding could think - that is, no difference that can be expressed in concepts - and yet the differences are inner as far as the senses tell us, for the left hand can't be enclosed in the same boundaries as the right (they are not congruent), despite all their equality and similarity. For example, the glove of one hand can't be used on the other. So the two hands are intrinsically different in a manner that cannot be captured in concepts - it can only be *shown* through the fact that a spatial region that exactly contains one will not contain the other.

How can this be? Well, these objects are not representations of the things as they are in themselves, but are sensible intuitions, i.e. appearances, which come about through the relation to our sensibility of certain things that are unknown in themselves. When this sensibility is exercised as *outer* intuition, its form is *space*; and the intrinsic nature of any region of space is fixed by how that region relates to space as a whole, the one big space of which it is a part. (The part is made possible by the whole: a small region of space can exist only if there is a larger region of which it is a part. This never happens with things in themselves, but it can happen with mere appearances.) Thus, to make intelligible to ourselves the difference between similar and equal yet incongruent things (e.g. snails winding opposite ways), we must relate them to the right and the left hand. That means that it must be done through intuition; it can't be done through any concept. That is, it must be done by *showing*, and can't be done by *telling*.

### Note I

The propositions of geometry are not mere fantasies that might have nothing to do with real objects. Pure mathematics, and in particular pure geometry, is objectively valid, but only in application to objects of the senses. When we represent such objects through our sensibility, we represent them not as they are in themselves but only as they appear to us. So they *must* have any features that are conferred on them by the form of our sensibility - and in particular they must be in space, because space is simply the form of all outer appearances. Outer appearances are possible only through sensibility, the form of which is the basis for geometry; so outer appearances must conform to what geometry says about them.

If the senses had to represent objects as they are in themselves, the situation would be quite different. For then the facts about our representation of space would not provide a guarantee about how things are in reality. The space of the geometer - a mere representation - would be a fiction with no objective validity, for there would be no reason why things should have to conform to the picture that we make of them in advance of being acquainted with them. But if

this picture, or rather this formal intuition, comes from the essential nature of our sensibility, through which objects must be given to us,

and if

what this sensibility represents are not things in themselves but only their appearances,

it then becomes conceivable - indeed undeniable - that

all outer objects of the world of the senses must agree exactly with the propositions of geometry.

It is a remarkable fact that at one time mathematicians who were also philosophers began to have doubts about their geometrical propositions - not about whether they were true of *space*, but about they held good in application to nature, that is to *things in space*. They feared that a line in nature might consist of physical points, in which case the space of the natural object would consist of simple parts, although the space the geometer thinks about cannot be like that. That is, they feared that the space of natural objects might not be infinitely divisible, and might instead be made up of atoms of space, so to speak; whereas geometrical space is infinitely divisible. They didn't realize that the spatiality of outer things *must* exactly conform to the space the geometer thinks about, because:

¶All objects in space are mere appearances, i.e. not things in themselves but representations of our sensible intuition; and

¶the space the geometer thinks about - *space in thought*, we might call it - is just a form of our faculty of sensible representation.

·Putting these two together: an outer thing must be given to us through our sensibility, so it must conform to the form - the essential nature - of our sensibility, so it must obey the propositions of geometry. This is the only way to defend the objective validity of geometrical propositions against shallow metaphysical attacks. . . .

### Note II

Anything that is to be presented to us as an object must be given in intuition. But all our intuition happens through the senses - the understanding doesn't intuit anything. Now, we have just seen that the senses never *ever* enable us to know things as they are in themselves; all we encounter through the senses are the appearances of things; and these appearances are mere representations of sensibility. What follows is this: *All bodies, along with the space that contains them, are merely representations in us, and exist only in our thoughts.*

Isn't this blatant idealism? ·No, it is not, and I now explain why. Idealism says this:

Only minds exist, and the other things we think we perceive are only representations in us, with no external object corresponding to them.

I say the contrary:

Things are given to us as objects of our senses, existing outside us, but we know nothing of what they are in themselves; all we know are their appearances, that is, the representations they cause in us by affecting our senses.

So I say that there *are* bodies outside us - that is, things of whose nature in themselves we know nothing, knowing them only through our representations of them. We call such a thing a 'body', meaning 'the appearance to us of an unknown thing which is nevertheless real'. Can this be called idealism? It is the very opposite of it!

Long before Locke's time, but more so afterwards, it was generally accepted that although outer things are perfectly real, many of their properties belong not to things in themselves but only to their appearances. These properties, including heat, colour, taste, etc., were agreed to have no existence of their own outside our representations. I go further. I count *also* as mere appearances the remaining qualities of bodies - the 'primary' qualities of extension, place, and space in general with all that depends on it (impenetrability or materiality, shape, etc.). I have weighty reasons for this view, and there is not the slightest reason to reject it. A man who holds that ¶colours are aspects of the sense of sight and not qualities of the object in itself should not on that account be called an idealist. So I should not be called idealist either, merely because I hold that ¶all the qualities that make up the intuition of a body belong merely to its appearance. This doctrine of mine doesn't destroy the existence of the thing that appears, as genuine idealism does; it merely says that we can't through our senses know the thing as it is in itself.

What would I have to say to stop people from accusing me of idealism? It wouldn't be enough for me to say:

Our representations of outer objects are perfectly appropriate, given how our sensibility relates to those objects;

for that is what I *have* said ·and still the accusations continue·. I would also have to say:

Our representations of outer objects are exactly *like* the objects themselves.

But that, to me, makes as little sense as the assertion that the sensation of red is *like* the property of the pigment that causes this sensation in me.

### Note III

‘When you admit the ideality of space and time, you turn the whole world of the senses into pure illusion’ - it is easy to foresee that this complaint will be levelled, and easy to show, from what I have said, that it is futile. At first all philosophical insight into the nature of knowledge through the senses was tainted by taking sensibility to be a mode of representation which, though confused, lets us know things as they are without our being able to get the whole content of this representation clear in our minds. ·Replacing that disastrous mistake·, I showed Ÿthat sensibility has to be understood in terms not of this *logical* clear/obscure distinction but of something *genetic*, having to do with where knowledge comes from - sense-perception represents things not as they are but only the mode in which they affect our senses - and consequently Ÿthat what sense-perception provides for the understanding to think about are *appearances* only, not things themselves. Now that I have given this necessary corrective, it would be an unpardonable misunderstanding - almost a *deliberate* one - to say that my doctrine turns all the contents of the world of the senses into pure illusion.

When an Ÿappearance is given to us, it is up to us to choose how to Ÿjudge the matter. The Ÿappearance depends on the senses, but the Ÿjudgment depends on the understanding, and the only question is whether a given judgment is *true* or not. But the difference between truth and dreaming is not ascertained by Ÿthe nature of the representations in question (for *they* are the same whether or not one is dreaming), but by Ÿtheir inter-connections according to those rules that bring representations together under the concept of an object and settle whether or not they can co-exist in a single experience. And it is not the appearances’ doing if our mind takes illusion for truth, that is, if it takes the *intuition* through which an object is given us to be a *concept* of the thing or even to be the thing itself - these being items that the *understanding* can *think* ·but the *senses* cannot *present*·. The senses represent the planets to us as moving backwards and forwards, and in this there is neither falsehood nor truth, because as long as we take this ·planetary· path to be nothing but appearance, we make no judgment about the objective nature of the planets’ movements. But when the understanding is not on its guard against this subjective representation’s being taken to be objective, a false judgment can easily arise - ‘They seem to be moving backward’, we may say. The illusion must not be charged to Ÿthe senses, however, but to Ÿthe understanding, whose job it is to render an objective judgment on the basis of the appearances.

Thus, even if we gave no thought to where our representations come from, when we connect our sensory intuitions (whatever their content) in space and in time, according to the rules governing the way all knowledge hangs together in experience, we will encounter *illusion* or *truth* according as we are *negligent* or *careful*. The difference between illusion and truth turns on how sensory representations are handled in the understanding, not on where they come from. In the same way, if I

¶take all the representations of the senses to be nothing but appearances,  
 ¶take space and time also to be appearances and as a mere *form* of sensibility that  
 is not to be met with outside its borders, and  
 ¶use these representations only in relation to possible experience,

then my regarding them as appearances will not involve me in the slightest temptation to think in terms of error or illusion; for appearances can hang together according to rules of truth in experience. Whether they do so hang together is something I can determine without bringing in their ultimate status, that is, the question of whether space and its contents are appearances. That is how all the propositions of geometry hold good for space as well as for all the objects of the senses and consequently of all possible experience, whether I ¶take space to be a mere form of the sensibility or ¶regard it as something that clings the things themselves; though it is only in the former case that I can grasp how I can know *a priori* that these propositions are true of all the objects of external intuition. Apart from that one matter of knowing how geometry can be known *a priori*, all my dealings with space and its contents are just what they would have been if I had not departed from the common view.

But there is a way in which an error *could* arise. If I pass off space and time as qualities inherent in things in themselves, there will be nothing to stop me from thinking that those two concepts would hold good for the same things that they now apply to even if my senses were different and could not present those things to me; and so I shall be led to venture to carry my notions of space and time out beyond all possible experience; and then I can fall victim to an illusion that would generate a grave error, namely that of passing off as *valid for everything* something that is merely a subjective condition of the intuition of things and *valid only for all objects of sense*, that is, for all possible experience. I would be led into this error by thinking of space and time as containing ¶things in themselves, rather than as restricting them to the ¶conditions of experience.

So my doctrine of the ideality of space and of time (that is, my doctrine that space and time are appearances) comes nowhere near to turning the whole world of the senses into mere illusion. I shall offer two graphic illustrations of this. Firstly, the doctrine is so far from ¶turning the sensible world *into* illusion that it is the only means of ¶saving something *from* being regarded as mere illusion; what it saves is one of the most important kinds of knowledge (the kind that mathematics propounds *a priori*), which the doctrine guarantees does apply to actual objects. Here is why it is the only way of securing this result. Without the ideality of space and time it would be quite impossible to decide whether the intuitions of space and time - which we don't take *from* any experience, and which nevertheless lie in our representation *a priori* - so that we take them *to* every experience - are not mere phantoms thrown up by our brain, with nothing adequately corresponding to them, in which case geometry itself is a mere illusion; whereas we *have* been able to prove geometry's unquestionable validity with respect to all the objects of the sensible world, just because they are mere appearances.

Secondly, it is so far from being the case that these principles of mine turn the truth of experience into mere *sensory illusion* by making appearances of the representations of the senses, that they are rather the only means of preventing the *transcendental illusion* by which metaphysics has hitherto been deceived, leading to an infantile snatching at bubbles by metaphysicians who took appearances - which are mere representations - to be things

in themselves. [By ‘transcendental illusion’ Kant here means something like ‘abstract philosophical illusion’. His more special sense of ‘transcendental’, explained near the end of section 12, will come up again in the next paragraph.] That illusion is what brought on stage the remarkable *antinomy* [= ‘contradiction’] of reason that I shall return to in sections 51-53. All it takes to clear up this internal contradiction into which reason falls is a single observation: that appearance, as long as it is employed in experience, produces truth, but as soon as it goes beyond bounds of experience and consequently becomes transcendent [= ‘freed from any constraints having to do with the senses’] it produces nothing but illusion.

Thus, in letting things as we confront them through the senses retain their actuality, and limiting our sensory intuition of these things only by saying this:

in no respect - not even in the pure intuitions of space and of time - do they represent anything more than mere appearance of those things, never their constitution in themselves,

I am not imputing to nature a sweeping illusion. [For the phrase ‘pure intuition’, see the explanation on page 10-11.] My rejection of all such imputations is so obviously valid and convincing that one might think there was no need for it. And there wouldn’t be, if it weren’t for the existence of incompetent judges who - liking to have an old name for everything that diverges from their own wrong-headed though common opinions, and always clinging to the *letter* of what is said with no thought for its *spirit* - are ready to deform and distort well-defined notions by putting their own follies in the place of them. I have myself given this theory of mine the name ‘transcendental idealism’, but that cannot entitle anyone to muddle it either with the ‘empirical idealism of Descartes or with the ‘mystical and visionary idealism of Berkeley. (My critique of pure reason contains the proper antidote to phantoms like Berkeley’s. As for Descartes: all he had was an insoluble problem, which led him to think that everyone is at liberty to deny the existence of the corporeal world because it could never be proved satisfactorily.) Doubting the existence of things constitutes ‘idealism’ in the ordinary sense; but the doctrine I have labelled as ‘idealism’ - in the phrase ‘transcendental idealism’ - doesn’t concern the existence of things, since it never entered my head to doubt that they exist. Rather, it concerns the sensory representation of things, especially of space and time. All I have shown regarding space and time, and thus more generally regarding all appearances, is that they are not things but mere features of how we represent things, and are not qualities of things in themselves. But the word ‘transcendental’ was meant to guard against this misconception. (For me, ‘transcendental’ signifies a reference to our knowledge not of things but only of our ability to have knowledge. I characterized my idealism as ‘transcendental’ because it offers an explanation of *how we can know* certain things *a priori*.) But rather than furthering the misunderstanding, I now retract the label ‘transcendental’ and ask that my idealism be called ‘critical’. But if it really is an objectionable idealism to convert actual things (not appearances) into mere representations, by what name shall we call the idealism that goes the opposite way and changes mere representations into things? It may, I think, be called ‘dreaming idealism’, in contrast to the former, which may be called ‘visionary’. Both are refuted by my transcendental idealism - or, better, *critical* idealism.

## SECOND PART OF THE MAIN TRANSCENDENTAL PROBLEM: How is pure natural science possible?

### Section 14

The word 'nature' has two senses. I shall employ the word in what I shall later call its 'formal' sense in this section and the next, and then in section 16 I shall start to use 'nature' in what I call its 'material' sense. Both will be in play in section 36. Nature is the existence of things insofar as it is governed by universal causal laws. If this meant the existence of things *in themselves*, we could not know nature either *a priori* or *a posteriori*.

One way of knowing things *a priori* is knowing them through the analysis of concepts. We could not know nature *as it is in itself* in that way, because knowledge of what things are like in themselves can never come from analytically dissecting our concepts: we are not asking what is contained *in* our concept of the thing, but rather about what is *added* to this concept in the reality of the thing itself. Some synthetic propositions can be known *a priori* because their truth is assured by the nature of our understanding, somewhat in the way that mathematical truths can be known *a priori* because our sensibility assures their truth. But this is also not applicable to the supposed 'knowledge of nature as it is in itself', which we are discussing. My understanding has an effect on how things *appear* to me, but it cannot dictate what things are like *in themselves*. They don't have to conform to it; so if I am to know about things in themselves my understanding must conform to them, not vice versa. That means that I couldn't know about them until they had somehow been presented to me; which is to say that I couldn't know them *a priori*.

Nor could I have *a posteriori* knowledge - that is, knowledge through experience - of the nature of things in themselves. If I am to bring things under causal laws, these laws must apply to them *necessarily*, and experience could never show me how things must be - only that they exist and what they are like. So it can never teach me the nature of things in themselves.

### Section 15

Yet we do have pure natural science, which discovers *a priori* certain laws that govern all of nature, and discovers them to be necessary. One part of it is what we call 'general natural science', which is a preliminary to empirical physics. In this we find mathematics applied to appearances on the basis of intuition, and also conceptual principles that make up the philosophical part of pure knowledge of nature. A couple of qualifications should be mentioned. It is not strictly pure, because there are things in it that are based on experience, such as the concepts of *motion*, of *impenetrability*, of *inertia*. Nor is it 'general' in the strictest sense, because it concerns only the objects of the outer senses, whereas a truly general natural science would apply laws to the whole of nature - not only outer objects (physics) but also inner ones (psychology).

Still, some principles of this general physics are strictly universal, for instance the propositions 'Substance is permanent' and 'Everything that happens is determined by a cause according to constant laws'. These really are universal laws of nature that we can know *a priori*. So pure natural science does exist, and we have to ask: How is it possible?

## Section 16

I now want to use the word 'nature' in a broader sense, its material' sense, in which it refers to every aspect of the totality of all objects of possible experience, that is, the whole perceivable world. Until this point I have been using 'nature' in its narrower sense, making it refer only to the way all things fall under the system of laws.

The *perceivable* world is all we have to concern ourselves with. If we tried to learn about things that *couldn't* be objects of experience, we would have to think about them through concepts that could not be illustrated or cashed out in terms of any possible experience. Such concepts would be empty; we could play around with them in our minds, but we could never know whether they applied to anything rather than being mere fictions that we had contrived. Knowledge of something that couldn't be an object of experience would be supernatural in the quite literal sense of being above nature, and the supernatural is no part of our present concern. The knowledge that we care about is the sort which, although it precedes experience rather than arising out of it, can be confirmed by experience.

## Section 17

It has just been shown that the laws of nature can never be known *a priori* of objects considered in themselves (rather than in terms of possible experience of them). But we aren't concerned here with things in themselves; their properties don't interest us. Our concern is with things considered as objects of a possible experience, and the totality of these things is what we here call 'nature' in the broad sense. Now, we are going to enquire into what enables us to have *a priori* knowledge of nature, and we have to choose between two ways of framing our problem.

How can we know *a priori* that experience itself must conform to law?

How can we know *a priori* that things (considered as objects of experience) must conform to law?

The two questions turn out to be equivalent. The laws that govern our ways of knowing also govern the objects that we know, as long as these are considered as objects of experience and not as they are in themselves. There are two things we can say:

(a) A judgment of perception can't count as valid for *experience* unless the mind in which it occurs conforms to the following law: When any event is observed to happen, it is connected with some earlier event that it follows according to a universal rule.

(b) Everything that we experience as happening must be caused to happen.

It makes no difference which we say: they come down to the same thing.

Still, we shall do better if we start with (a). We can make *a priori* discoveries about what the conditions are under which experience is possible, but we can't make such discoveries about laws that apply to things in themselves independently of our experience of them. So our only way of studying the nature of things *a priori* is by studying the conditions under which experience is possible, including the universal laws of the mind that make it possible. What I am saying, in effect, is that we should tackle (b) by tackling (a). If I chose to start with (b), I would risk falling into error by imagining that I was

talking about nature in itself. That would set me whirling around in endless circles, trying in vain to discover laws governing things that are not *given* to me - as things are *given* to me in experience.

So our only concern here will be with experience and with what universal conditions have to be satisfied for experience to be possible - conditions that we can know about *a priori*. On that basis we are to establish the characteristics of nature as the whole object of all possible experience. You will understand, I think, that I am not talking about rules that we learn by observing a nature that is already given, for such rules already presuppose experience; so I am not talking about how through experience we can study the laws of nature, for laws learned in that way would not be laws *a priori*, and would not supply us with a *pure* natural science. Rather, my topic is the question of how the conditions that we can know *a priori* have to be satisfied if experience is to be possible at the same time the sources from which all the universal laws of nature must be derived.

### Section 18

The first thing to make clear is this: although all *judgments of experience* are *empirical* (i.e. have their ground in immediate sense-perception), the converse does not hold: not all empirical judgments are judgments of experience. That is because a judgment of experience must contain more than merely an empirical component, given through sensory intuition. It must also involve particular concepts that do not come from sense-experience, but originate *a priori* in the pure understanding - concepts under which every perception must first be brought and then by their means changed into experience.

Empirical judgments fall into two kinds: judgments of experience and judgments of perception. The former are objectively valid. They are based on immediate sense perception, but they add to it: when something is given to sensible intuition, a judgment of experience applies to it certain special concepts that pure understanding gives rise to, completely independently of experience. *Perceptions* are turned into *experience* by being brought under these concepts. Judgments of perception are only subjectively valid: all they need is that the perceptions hang together in the right way in mind of the person concerned (the *subject*); they don't involve any of the pure concepts of the understanding.

All our judgments start out by being judgments of perception, and thus as valid only for us (that is, for our *subject*). Later on we make them refer to an *object*, and mean them to be valid for all people and for ourselves at all times. A judgment's being about an object connects with its being universally valid, and the connection runs both ways. On the one hand: if my judgment is about an object, then anyone else's judgment about that same object should agree with mine, which is to say that mine must be universally valid. On the other hand: if a judgment of mine is universally valid, agreeing with the judgments of all others, this agreement has to be explained. The explanation must be that the judgments agree with one another because they all refer to the same object.

### Section 19

So something's being true of an object is equivalent to its having to be the same for everyone: objective validity and necessary universal validity stand or fall together. When we regard a judgment as universally valid and necessary, we mean by this that it is

objectively valid, even though we don't know the object in itself. We know the object through this judgment - that is, through the judgment that anyone who has perceptions of kind F with respect to the object must also have perceptions of kind G. So judgments of experience get their objective validity not from immediate knowledge of the object but from how perceptions are connected with one another; and these connections come not from anything empirical but from pure concepts of the understanding. They cannot have an empirical basis because they involve necessity; the judgments in question say that certain perceptions *must* be associated with certain others; and experience never tells us what must be the case. The object in itself always remains unknown; but it gives us perceptions through our sensibility, and these are connected; and when a concept of the understanding settles it that the connection is universally valid, the result is an objective judgment - something that doesn't merely report on perceptions but says things about an object.

Here is an illustration. That the room is warm, sugar is sweet, wormwood is nasty, are merely subjectively valid judgments.<sup>2</sup> In making such judgments, I do not expect that I shall find the room to be warm or sugar sweet or wormwood nasty at all times, or that everyone else will find them to be so. All that such a judgment does is to connect two sensations to a single subject (myself) at a particular time; they are not intended to be valid of the object. I call them judgments of *perception*. Matters are quite different with judgments of *experience*. What experience teaches me under certain circumstances it must teach me and everybody always; its validity is not limited to one person or one time; so its judgments are objectively valid. For example, when I say that *air is elastic*, this judgment starts out as a judgment of perception, which merely connects two of my sensations to one another. But if I mean it as a judgment of experience, I require that this connection be universally valid, i.e. that I and everybody must always conjoin the same sensations under the same circumstances.

## Section 20

So experience is a product of the senses and of the understanding, and we have to discover how these two faculties combine to produce it. One of them is simply intuition of which I am conscious, i.e. perception, which belongs merely to the senses. The second element that goes into experience is judging, which belongs entirely to the understanding. There are two kinds of judging. (a) I may merely compare perceptions and conjoin them in *a consciousness of my state*. (b) I may conjoin them in *consciousness in general*. What I have in (a) is merely a judgment of perception, a subjectively valid connecting of perceptions in my mind, without reference to an object. People often think that all you need for experience is to compare perceptions and to connect them in your consciousness by means of judgments about them; but they are wrong. That procedure does not lead to judgments that are universally valid and necessary, and that is what is needed for objective validity and for real experience.

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<sup>2</sup> Actually, these judgments of perception could never become judgments of experience, even if a concept of the understanding were added. They refer merely to feeling, which is incurably subjective and can never become objective. Still, they serve my immediate purpose of illustrating judgments that are merely subjectively valid, involving no relation to an object. In the next footnote I shall give an example of judgments of perception that *can* become judgments of experience.

To turn perception into experience, therefore, we need (b) a different kind of judging. An intuition (or perception) must be brought under a pure *a priori* concept of the understanding; this concept settles what kind or form of judgment can be made about this intuition; thus it connects the individual person's intuition with a frame of mind that anyone must be in when making judgments about such intuitions; and in this way it provides the empirical judgments with universal validity. Such a concept, I repeat, merely fixes a general way in which judgments can be brought to bear on the intuition. It might be the concept of *cause*, for instance. To bring this to bear on one's intuition (or perception) of air, for example, is to be disposed to make hypothetical judgments of the form 'If air is compressed, then. . .'.

Before a judgment of perception can become a judgment of experience, the perception must be brought under such a concept of the understanding - as when air is brought under the concept of cause, yielding judgments of the form 'If air is...., then....'.<sup>3</sup> The judgment that air is elastic can become universally valid, and thus be turned into a judgment of experience, because of certain preliminary judgments that bring the intuition of air under the concept of cause and effect.

If all our objectively valid synthetic judgments are analysed, it turns out that they never consist in mere intuitions that are brought together in a judgment through mere comparison. Always, a pure concept of the understanding has been added to the concepts that are abstracted from intuition. This applies even to the judgments of pure mathematics, including its simplest axioms. The principle 'A straight line is the shortest path between two points' presupposes that the line has been brought under the concept of *size*. That concept doesn't come from intuition; it has its seat solely in the understanding, and serves to get the intuition (of the line) ready for quantitative judgments to be made about it.

## Section 21

If we are to prove that experience is possible insofar as it rests on pure *a priori* concepts of the understanding, we need a list of these concepts. We arrive at this list through a list of basic kinds of judgments that we can make, because the pure concepts of the understanding run parallel to those judgment kinds. . . .

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<sup>3</sup> An easier example is: 'When the sun shines on the stone, it grows warm.' This is a mere judgment of perception and contains no necessity, no matter how often I and others may have perceived this. But if I say 'The sun warms the stone', 'which means that the sun *causes* the stone to become warm', the concept of *cause* is added to the perception and connects the concept of warmth necessarily with the concept of sunshine.

**LOGICAL TABLE OF JUDGMENTS**

<b>1</b>	<b>2</b>
<i>Quantity</i>	<i>Quality</i>
Universal	Affirmative
Particular	Negative
Singular	Infinite
<b>3</b>	<b>4</b>
<i>Relation</i>	<i>Modality</i>
Categorical	Problematic
Hypothetical	Assertoric
Disjunctive	Apodictic

**TABLE OF CONCEPTS OF THE UNDERSTANDING**

<b>1</b>	<b>2</b>
<i>Quantity</i>	<i>Quality</i>
Unity (measure)	Reality
Plurality (size)	Negation
Totality (whole)	Limitation
<b>3</b>	<b>4</b>
<i>Relation</i>	<i>Modality</i>
Substance	Possibility
Cause	Existence
Community	Necessity

**PURE PHYSICAL TABLE OF THE UNIVERSAL PRINCIPLES OF NATURAL SCIENCE**

<b>1</b>	<b>2</b>
Axioms of Intuition	Anticipations of Perception
<b>3</b>	<b>4</b>
Analogies of Experience	Postulates of empirical thinking generally

**Section 21a**

If you are to grasp all this in a single thought, I must first remind you that our topic is not *where experience comes from* but *what experience contains*. The former topic belongs to empirical psychology, though even that would not suffice without the latter topic, which belongs to the critique of knowledge and especially of the understanding.

Experience consists of intuitions, which belong to the sensibility, and of judgments, which are entirely a work of the understanding. But the judgments that the understanding forms from sensory intuitions alone are far from being judgments of experience. For a judgment of the former kind only connects the perceptions as they are given in sensory intuition, while a judgment of experience must express what is contained in experience in general, and not merely what is contained in the mere perception (which possesses only

subjective validity). So a judgment of experience must add something to the sensuous intuition and the logical tie-up of that intuition to others in a judgment (after it has been made universal -merely- by comparing this intuition with others-). What it must add is something implying that the synthetic judgment is *necessary* and therefore universally valid - not merely universal in the weak way that comes from comparing intuitions with one another-. This added element can only be the concept that represents the intuition as a suitable subject for one form of judgment rather than another.

## Section 22

Summing up: The business of the senses is to intuit; that of the understanding, to think. Now, thinking is unifying representations in a consciousness, and this can be done either in a contingent and subjective way or in a manner that is necessary and objective. Since thinking is the same as judging, it follows that judgments are of two kinds: a judgment may be merely

subjective (when representations are related to one another only with respect to one person's consciousness),

or it may be

objective (when the representations are related with respect to consciousness in general, that is, with respect to every possible conscious mind).

The basic kinds of judgment are simply *possible ways of unifying representations in a consciousness*; and when they serve as concepts, they are concepts of the *necessary* unification of representations in *any* consciousness, which means that the judgments that involve them are objectively valid. In experience, perceptions are synthetically but necessarily connected in a consciousness; for them to be connected in this manner, they must be brought under pure concepts of the understanding; so these concepts are required if any judgments of experience are to be made.<sup>4</sup>

## Section 23

Judgments can be seen as ways of unifying representations in a consciousness. Looked at in this way, they are rules. When they represent the perceptions as necessarily united, they are *a priori* rules; and when they stand on their own feet, not being derived from something more fundamental, they can be called 'principles'. The broad kinds of judgment that serve to bring intuitions under pure concepts of the understanding are not derived from anything; they do stand on their own feet. So they are the *a priori* principles of possible experience.

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<sup>4</sup> But how does this proposition that *Judgments of experience require that perceptions be brought together necessarily* square with my often-made statement that *Experience as a posteriori knowledge can only provide contingent judgments*? When I say that experience teaches me something, I mean only that I learn something from the perception that lies *in* experience - for example, that

Heat always follows the shining of the sun on a stone

- and to that extent the proposition of experience is always accidental -or contingent-. The proposition that

This heat *necessarily* follows the shining of the sun

is indeed contained *in* the judgment of experience (by means of the concept of cause), but it is not a fact learned *from* experience. On the contrary, this addition of the concept of cause to perception is what creates experience in the first place.

Now the principles of possible experience are at the same time universal laws of nature, which can be known *a priori*. This solves the problem raised by our second question, ‘How is pure natural science possible?’ Here is how. Logic offers us only one set of basic kinds of judgment (and thus one set of basic rules); no other is possible. These constitute a *logical system*. The concepts that emerge from it, which make synthetic necessary judgments possible, constitute a *transcendental system*. [By that Kant means, roughly, a system that has to do with grounds for *a priori* knowledge.] And, lastly, the principles according to which these concepts are applied to all appearances constitute a *physical system*, that is, a system of nature. This system precedes all empirical knowledge of nature, and is what first makes such knowledge possible; so it can properly be called *universal and pure natural science*.

## Section 24

Of the physical principles listed in section 21, the first brings all phenomena, as intuitions in space and time, under the concept of *quantity*, which makes it a principle governing the application of *mathematics* to experience. The second principle takes up the genuinely empirical element, namely sensation, which signifies what is real in intuitions. It does not bring sensation directly under the concept of quantity, because sensation is not an intuition that *contains* either space or time, though it places the sensed object in both space and time. But still there is a quantifiable difference between sense-representation and a total absence of intuition in time, the difference between *reality* and *zero*. For we can conceive of intermediate degrees - as small as you like - separating any given degree of light from darkness, any degree of heat from absolute cold, any degree of weight from absolute lightness, any degree of fullness of space from total vacuum; just as there are intermediate degrees - as small as you like - separating consciousness from total unconsciousness (psychological darkness). So there is no perception that can prove an absolute absence; for instance, there is no psychological darkness that can’t be considered as a kind of consciousness, which is merely relatively dark, by comparison with some other stronger consciousness - and so it is in all cases of sensation. Sensation is what gives each empirical representation (each appearance) its own particular flavour. It might be thought to be all *content*, with no *form*, and so not to be something that the understanding could say anything about in advance. But the account I have been giving shows how the understanding can anticipate even sensations - i.e. say something about them in advance of their actually occurring - by means of the principle *Every sensation has a degree*, from which it follows that what is real in all phenomena has a degree. This is the second application of mathematics to natural science.

In discussing those two (sets of) principles of natural science, I have been implicitly discussing the corresponding (sets of) concepts, listed just before the list of principles in section 21. In the next section I shall take up the other two sets of concepts, and their associated principles.

## Section 25

In the table of the concepts of the understanding, one of the headings is Relation. This refers not to mathematical relations, but rather to dynamic ones (relations having to do

with how things exist in time). Firstly, appearances must be brought under the concept of *substance*; this is the concept of a *thing*, and any judgment about what exists must involve it. Secondly, when appearances involve events following one another in time, they must be brought under the concept of *cause and effect*. Thirdly, judgments of experience about things that exist together must involve the concept of *community* (which is really the concept of causal influence running in both directions). Thus *a priori* principles are involved in objectively valid though empirical judgments; they are needed if we are to have real experience, which connects objects in nature. These principles are the real laws of nature, and can be called dynamic.

Finally, judgments of experience include ones expressing knowledge of correspondences and connections; but their topic is not how appearances relate to *one another in experience*, but rather how they relate to *experience in general*. This has to do with whether they satisfy the formal conditions that the understanding recognizes, or with whether they fit with the materials of the senses and of perception, or it brings both considerations together under a single concept. So it has to do with possibility, actuality, and necessity according to universal laws of nature.

## Section 26

My third table in section 21 - the table of Principles that the critical method has extracted from the nature of the understanding itself - has a *completeness* that raises it far above every other table that anyone ever did or ever will offer in a vain attempt to extract principles by non-critical methods *from things themselves*. What makes my table complete is this: so far as the understanding is concerned, the essence of experience lies in the judgments that can be made about it, and I have used properties of the faculty of judgment as a single guiding rationale for what is included in my table of principles, namely *all* the synthetic *a priori* principles. So we can be certain that there are no more principles of that sort, and that certainty affords a satisfaction that the dogmatic method can never achieve. [Kant's use of 'dogmatic' is explained near the start of section 3.] Yet is this not all: my table of principles has another much greater merit that I shall now explain.

We must carefully bear in mind the premise that enables us to infer that there can be *a priori* knowledge such as the table of principles involves, and that at the same time subjects all such principles to the constraint that they are only about the conditions of possible experience in general so far as it conforms to laws *a priori*. If we lose sight of this constraint, we risk the principles' being misunderstood, and their being extended in use beyond the original sense that the understanding attaches to them. So I do not say

that things in themselves have a quantity,

that their actuality has a degree,

that their existence has a connection of qualities in a substance,

or the like. Nobody could prove any of those propositions because they are synthetic - connecting things with quantity, actuality with degree, and so on - and it is utterly impossible to prove such synthetic propositions on the basis of mere concepts, because what is proved from mere concepts is always analytic. The above propositions have only concepts to work with, because they purport to be about things in themselves; that prevents them from referring to how sensory intuitions are inter-connected in a possible

experience, which is the basis on which synthetic propositions can be proved *a priori*. So the essential constraint on the concepts used in these principles is: that it is only as *objects of experience* that things necessarily *a priori* satisfy the conditions laid down in the principles.

From this it also follows that the proof of these principles has a unique feature: namely that they are not directly concerned with *appearances and their inter-relations*, but with *the possibility of experience*. Appearances on their own are not the whole story; they constitute only the *matter* of experience, not its *form*. That is, the principles I'm talking about are concerned with objectively and universally valid synthetic propositions, in the context of which we distinguish judgments of *experience* from judgments of *perception*. I shall add a little detail about how this happens - how the principles are proved - in connection with three of the four groups of principles listed at the end of section 21 above.

Re the Axioms of Intuition: Appearances, as mere intuitions *occupying a part of space and time*, come under the concept of quantity, which can be used in a rule-guided way in synthetic *a priori* propositions which generalize over these intuitions. Re the Anticipations of Perception': Insofar as a perception contains not only intuition but sensation (which always differs from its own total absence by ever-smaller differences), the reality of appearances must have a degree. Now, sensation *does not itself occupy any part of space or of time*,<sup>5</sup> but it takes time to get from empty space or time to something involving sensation. Thus, although sensation (taken as that quality of empirical intuition that specifically distinguishes it from other sensations) can never be known *a priori*, it can nonetheless be intensively distinguished from any of the same kind as a *quantity of perception* in any possible experience. That is what makes it possible to apply mathematics to nature as regards the sensory intuition through which nature is given to us.

But pay special attention to the mode of proof of the principles that occur under the title of 'Analogies of Experience'. Unlike the principles of applied mathematics, these refer not to the *genesis* of intuitions but to *how they are interconnected*, as they actually occur, in experience; which can only be the determination of their existence in time according to necessary laws - laws that make the conditions objectively valid and thus create experience. So the proof of these principles doesn't turn on connections amongst *things in themselves* but merely amongst *perceptions*; and it doesn't involve the matter or content of the perceptions, but only how they are temporally related to one another according to universal laws. . . .

In these preliminaries I can't go on longer about this, except to say one thing to my reader. You have probably been long accustomed to regarding experience as a mere empirical hanging-together of perceptions, and so have not had the thought that it must go

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<sup>5</sup> Small areas of heat and light can be just as great in degree - that is, just as intense - as large ones; similarly, brief pains or other states of consciousness can be equal in degree or intensity to long-lasting ones. Where degrees of intensity are concerned, the quantity at a point in space and at a moment in time can be just as great as in any space or time of whatever size or duration. So degrees are quantities, but what is quantified is not an intuition but rather the mere sensation which is the intuition's content. The only way to measure them, therefore, is through the relation of 1 to 0, that is. by their capability of decreasing by infinite intermediate degrees to disappearance, or of increasing from nothing through infinite gradations to a determinate sensation in a certain time. The quantity of a quality is a degree of intensity.

much beyond them, conferring universal validity on empirical judgments and for that purpose requiring a pure and *a priori* unity of the understanding. So I recommend to you that you pay special attention to my distinction between *experience* and a mere *aggregate of perceptions*, and to judge the mode of proof from this point of view.

### Section 27

Now we have reached the place where Humean doubt can be removed. Hume rightly said that reason can't give us insight into

    • causality, i.e. the notion that the existence of one thing might necessitate the existence of another.

I add that we have equally little insight into the concept of

    • substance, i.e. the notion that the existence of things must be based on a subject that cannot itself be a predicate of anything else.

Indeed, we can form no concept of the possibility of such a thing, although we can point to examples of its use in experience. Nor have we any insight into

    • community, that is, into how substances that have their own entirely separate existences can necessarily depend on one another.

None of these three concepts is supplied by reason, but they have - as I have shown - their seat in the understanding. These concepts and the principles drawn from them stand *a priori* before all experience; they are applicable only to experience, but within that domain they have undoubted objective rightness. That doctrine saves me from having to conclude that the concepts in question are borrowed from experience, which would mean that the necessity they involve is fictitious - a mere illusion resulting from long habit.

### Section 28

I cannot conceive how (a) things in themselves could

    • exist as substances, or

    • be causes, or

    • be in community with others as parts of a real whole.

Still less can I conceive how any of these could be true of (b) appearances considered as raw and unprocessed perceptions or sensory states, not brought under concepts of the understanding. But we can conceive of such connections of (c) representations in our understanding. These representations figure in one kind of judgment as

    • subject related to predicates,

in a second kind as

    • source related to upshot,

and in a third kind as

    • parts that are inter-related to make up a knowable whole.

We also know *a priori* that unless we take the representation of an object to be related in one of these ways, we can have no knowledge that would be valid of the object. Of course if we attend to the object *in itself*, we are lost: there is no possible way for me to recognize that a thing in itself is related in one of those ways, that is, that it belongs under the concept of • substance or of • cause or (in relation to other substances) under the concept of • community. But things in themselves are not my topic. What I am concerned

with is how experiential knowledge of things involves those three types of judgment, i.e. how objects of experience can be brought under those concepts of the understanding. I have perfect insight into *that*: I grasp not merely that we *can* bring appearances under these concepts but that we *must* do so, in that way using the concepts as principles of the possibility of experience.

### Section 29

Let us apply all this to Hume's problematic concept, namely the concept of cause. Sheer logic tells me *a priori* that there can be conditional judgments - ones of the form 'If . . . , then . . .' - in which one piece of knowledge is treated as a source and another as an upshot. I may have occasion to make such a judgment, reporting that in my perceptions one kind of appearance is regularly followed by another, as when I say 'If the sun shines long enough on a body, then the body grows warm'. This doesn't connect the two necessarily, and it doesn't involve the concept of cause; so far, it is merely a subjective connection of *perceptions*. For it to be a proposition of *experience*, it must be regarded as necessary and as universally valid, like the proposition 'The sun through its light is the cause of heat'. The empirical generalization with which I started is now regarded as a law, and as being valid for appearances in a manner that is required if experience is to be possible - for there can't be experience without rules that are universally and therefore necessarily valid. So I do have insight into the concept of cause, as a concept necessarily belonging to the possibility of experience. What about the concept of things in themselves as causes? I have no conception of *that*, because the concept of cause doesn't correspond to anything in things but only to a fact about experience, namely that if experience is to be objectively valid knowledge of appearances and of their sequence in time, some appearances must be related to later ones in conditional judgments.

### Section 30

Hence the pure concepts of the understanding have absolutely no meaning if they are pulled away from objects of experience and applied to things in themselves (noumena). [Kant uses 'noumenon' (plural 'noumena') to mean 'thing that can only be thought', in contrast to 'phenomenon' (plural 'phenomena'), meaning 'thing that can be experienced'. Things in themselves are noumena because although we can perhaps think about them, we can't possibly experience them.] The role of pure concepts of the understanding is to *spell out* appearances, so to speak, enabling them to be read as experience. When these concepts are applied to the world of the senses, the principles that arise from this use help our understanding to manage our experience. Beyond the bounds of experience they are arbitrary connections without objective reality: there is no *a priori* guarantee that they apply to anything, and no examples can be given of their applicability to objects. Indeed, we don't even know what such an example could be like. We have no conception of it, because examples have to be drawn from some possible experience. Possible experience is the proper domain of the pure concepts of the understanding.

So the Humean problem is completely solved, though in a way that would have surprised its inventor. The solution secures an *a priori* origin for the pure concepts of the understanding, and for the universal laws of nature it secures a status as valid laws of the

understanding; but it does this in such a way as to limit the use of these concepts to experience only, and it grounds them in a relation between the understanding and experience that is the complete reverse of anything that Hume envisaged - instead of the concepts being derived from experience, that experience is derived from them.

My line of argument yields the following result: *All synthetic a priori principles are simply principles of possible experience*; they can never be applied to things in themselves, but only to appearances as objects of experience. Hence pure mathematics as well as pure natural science can never bear on anything except appearances.

### Section 31

Until now, metaphysicians have proceeded boldly enough, but always tramping over everything blindly, without making any distinctions. My work gives us, at last, something definite to rely on as a guide in metaphysical enterprises. It never dawned on the dogmatic thinkers that the goal of their efforts might be so near; nor did it dawn on the philosophers who, proud of their supposedly sound *reason*, set out on their quest for results, equipped with concepts and principles of pure reason (which were legitimate and natural, but fit only for merely empirical use). These philosophers did not and *could* not know any fixed boundaries to territory within which results might be gained, because they hadn't and *couldn't have* ever reflected on the nature of such a pure understanding or even on its possibility.

Many a naturalist of pure reason (by which I mean someone who thinks he can settle metaphysical questions without any theoretical grounding in the subject) may claim that the prophetic spirit of his sound reason enabled him, long ago, not merely to suspect but to know and understand the doctrine I have been advancing with so much ado (or, as he may prefer to say, with long-winded pomp), namely that *with all our reason we can never reach beyond the field of experience*. But when he is questioned about his principles of reason individually, he must admit that many of them have not been *taken from* experience and are therefore *independent of* it and valid *a priori*. But then what basis will he have for putting limits on the dogmatist who uses these concepts and principles beyond all possible experience because he sees them to be independent of it? And even he, this expert in sound reason, in spite of all his assumed and cheaply acquired wisdom, risks wandering inadvertently beyond objects of experience into the domain of fantasies. He is often deeply enough involved in it, though he colours his groundless claims by adopting popular language and announcing everything as 'mere probability', 'rational conjecture', or 'analogy'.

### Section 32

Since the earliest times of philosophy, enquirers into pure reason have thought that in addition to the things of the senses, or appearances (phenomena) of the world of the senses, there are things of the understanding (noumena), and have thought that only the latter are real. That is because they took the former - that is, appearances - to be illusory; a mistake, but an excusable one in a primitive age.

In fact, when we (rightly) regard the objects of the senses as mere appearances, we thereby admit that they have a thing in itself as their ground - namely, the thing *of* which

they are appearances. We do not know what this thing is like in itself; all we know is its appearance, i.e. how this unknown something affects our senses. In accepting appearances, therefore, we also admit the existence of things in themselves: the thought of such noumena, that is, 'things of the understanding', is not merely allowed but is unavoidable.

[In this paragraph, Kant refers to the Aesthetic. That is the first part of the *Critique of Pure Reason*, concerning the status of time and space and their relation to sensibility.] My critical deduction limits the principles of the Aesthetic so that they hold good only for objects of possible experience, because extending them to all things would be turning everything into mere appearance; my deduction doesn't at all imply that *there are* no noumena. So these beings of the understanding are allowed, subject to this rule, to which there can be no exceptions: *We do not and cannot know anything determinate about these beings of the understanding.* That is because our pure concepts of the understanding and our pure intuitions bear on objects of possible experience - that is, things of the senses - and on nothing else. As soon as we move away from the senses, those concepts are drained of all their meaning.

### Section 33

Indeed, there's something seductive in our pure concepts of the understanding, which tempts us to use them in a *transcendent* manner - that being my label for a use that *goes beyond* all possible experience [not = 'transcendental']. Our concepts of substance, of power, of action, of reality, and others are quite independent of experience, containing nothing of sensory appearance, and so they seem to be applicable to things in themselves (noumena). And this impression is strengthened by the fact that those concepts contain within themselves an element of *necessity* which experience never matches up to. The concept of *cause* implies a rule according to which one state follows another *necessarily*; but experience can only show us that one state of affairs *often or usually follows* another, so it cannot provide us with either strict universality or necessity.

So the concepts of the understanding *seem* to have content and significance that spreads beyond their empirical use, and the understanding unknowingly builds for itself a much larger addition to the house of experience, and fills it with merely notional entities, without once noticing that in doing this it has carried its otherwise lawful concepts beyond the bounds of their legitimate use.

### Section 34

Because of all this, the *Critique of Pure Reason* had to contain two important though extremely dry investigations. In one of them, contained in the chapter entitled 'The Schematism of the Pure Concepts of the Understanding', I show that what the senses provide for are not concrete applications of the pure concepts of the understanding, but only the schema for their use, and that the corresponding object occurs only in experience (as something the understanding makes out of the materials of the senses). In the second indispensable chapter, 'On the Grounds of the Distinction of all Objects as Phenomena and Noumena', I show that, although our pure concepts and principles of the understanding are independent of experience, and despite their *seemingly* greater sphere of

use, we still can't use them to have any thoughts whatsoever beyond the domain of experience, because their only role is to fix *the logical forms of judgments that we make about given intuitions*. But as there is absolutely no intuition outside the domain of the senses, these pure concepts have no meaning outside that domain; and all these noumena, together with the intelligible<sup>6</sup> world that they compose, are nothing but the representation of a *problem*, namely the problem or question: *What are noumena like? What is the intelligible world like?* What the question is *about* is something possible; but answering it in terms of the concepts of our understanding is quite impossible. That is because of the nature of our understanding, whose role is not to deliver intuitions but to connect intuitions that are given in experience; that is, it doesn't present us with real particular things, but only enables us to inter-connect particulars that we get from elsewhere, namely from our senses. So experience must contain all the materials to which we apply our concepts; and beyond it no concepts have any significance, as there is no intuition that might offer them something to grip onto.

### Section 35

The  $\Psi$ imagination may perhaps be forgiven for sometimes wandering, not keeping carefully within the limits of experience; for such roaming gives it life and vigour, and that is an advantage, because it is always easier to moderate the imagination's boldness than to rouse it from lethargy. But the  $\Psi$ understanding's job is to *think*, and it can never be forgiven if it *wanders* instead, for it is our only resource for setting limits, when they are needed, to the wanderings of the imagination.

The understanding begins its misbehaviour very innocently and soberly. First it brings to light the elementary items of knowledge that it contains *in advance* of all experience, though they must never be applied *outside* experience. It gradually discards these limits, and what is there to prevent it from doing so when it has quite freely drawn its principles from itself? Having dropped the restriction to experience, it proceeds first to newly-thought-up powers in nature, and soon after that to beings outside nature. In short, it proceeds to a *non-natural* world; and there can be no shortage of materials for constructing such a world, because fertile fiction-making provides them in abundance - and though it is not *confirmed* by experience it is never *refuted* by it either. This is why young thinkers are so partial to metaphysics of the truly dogmatic kind, devoting to it their time and talents that could be better employed.

But it is no use trying to damp down these fruitless efforts of pure reason by  $\Psi$ offering all sorts of reminders of how hard it is to answer such deep questions, by  $\Psi$ complaining about how limited our reason is, and by  $\Psi$ down-playing our assertions as mere conjectures. The only way to get these fruitless efforts to be completely abandoned is to  $\Psi$ show clearly that they are impossible, and to allow reason's *knowledge of itself* to become a true science in terms of which the domain of reason's right use is distinguished with mathematical certainty from that of its worthless and idle use,

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<sup>6</sup> Not the *intellectual* world (as the usual expression is). For cognitive  $\Psi$ operations of the understanding are intellectual, and some of them are thinkings about the world of our senses. The term 'intelligible' applies to  $\Psi$ objects insofar as they can be represented by the understanding all on its own, without our sensible intuitions coming into it in any way. . . .

### Section 36: How is nature itself possible?

This question is the highest point that transcendental philosophy can ever touch. [Reminder: by 'transcendental' Kant means 'having to do with grounds for *a priori* knowledge'.] It is a point that transcendental philosophy *must* reach, because it is its boundary and completion. Really it contains two questions.

*First:* What makes it possible for there to be nature - in the *material* sense of that word, in which it stands for the totality of appearances? That is to ask: How are space and time and their contents possible in general? The answer is: What makes them possible is the way our sensibility is - the special way in which it is affected by objects that are in themselves unknown and are not in themselves spatial or temporal. This answer has been given in the *Critique* (in the Transcendental Aesthetic), and here in the *Preliminaries* through the solution of the first question.

*Secondly:* What makes it possible for there to be nature in the *formal* sense, in which nature involves the totality of rules that must apply to all appearances if they are to be connected by thought in an experience? The answer must be this: What makes nature possible is the way our understanding works. In the background is the crucial fact that all the representations of the sensibility have to be related to a consciousness; for different items to be held in a single consciousness, they must be related to one another in certain ways, and these relations are imposed upon them by the understanding. And so all the representations that we are discussing must fall within the scope of our understanding. And the answer to our question is that there can be a rule-governed *nature* (in the formal sense) because our understanding demands that items that are thought about be brought under rules. This rule-governedness is what makes *experience* possible; don't mistake this for an insight into the objects in themselves! This answer is given in the *Critique* itself in the Transcendental Logic, and in these *Preliminaries* in the course of the solution of the second main problem.

Why is our sensibility like that? Why is our understanding like that? We cannot address these questions, because we have to *use* our sensibility and our understanding in all the questions we ask and all the thinking we do in looking for answers.

There are many laws of nature that we can know only through experience; but experience can't teach us the general truth that *appearances are connected in conformity with laws*, because the application of such laws is what makes experience possible in the first place.

So the possibility of experience - of *any* experience - is at the same time the universal law of nature, and the principles of the experience are themselves the laws of nature. For we know nature only as the sum-total of appearances, that is, of representations *in us*, and hence we can only derive the laws governing how nature's parts are inter-connected from the principles governing how they are connected *in us*, that is, from the conditions that have to be satisfied if they are to be united in a single consciousness. (If they weren't united into one consciousness there couldn't be any experience.)

The main thesis of this part of the *Preliminaries*, namely that universal laws of nature can be known *a priori*, leads all by itself to this conclusion:

The source of the highest laws of nature lies in ourselves, i.e. in our understanding. Rather than using experience to find the universal laws of nature in nature, we

must go in the opposite direction. That is, we must look for nature itself - as a system that universally conforms to laws - in the features of our sensibility and understanding that make experience possible.

How else could the laws of nature be known *a priori*, given that they are not analytic but synthetic?

Why must the principles of possible experience agree with the laws that govern what is possible in nature? We have a choice of two answers: either (a) these laws are drawn from nature by means of experience, or conversely (b) nature is deduced from the conditions that make experience possible. But (a) is self-contradictory, for the universal laws of nature must be known independently of all experience, because all empirical use of the understanding is based on them; so only (b) remains.<sup>7</sup>

Empirical laws of nature always rely on particular perceptions. We must distinguish such laws from the pure or universal laws of nature, which are not based on particular perceptions and simply lay down the conditions that enable perceptions to be unified so as to constitute experience. So far as the laws are concerned, nature and possible experience are one and the same. The law-abidingness of possible experience - that is, the holding of laws that are valid not just for actual but for all possible experience - depends on the necessary connection of appearances in experience (a connection without which there would be no unified consciousness, and so we wouldn't be able to know any object whatever in the sensible world), and so it depends on the original laws of the understanding. Because of this, we can say - though it sounds strange at first - that *The understanding does not draw its laws from nature, but prescribes them to nature.*

### Section 37

I shall illustrate this seemingly bold proposition by an example that is meant to show that laws that we discover in objects of sensory intuition (especially laws that we know to be necessary) are already held by us to have been placed there by the understanding, even though they are otherwise just like the laws of nature that we ascribe to experience. Actually, I shall do rather more than that. I shall show that laws that we are already willing to ascribe to our understanding (namely, those of geometry) *lead to* one of the laws (namely, the inverse-square law of gravitation) that wouldn't think of as contributed by our understanding unless we had been introduced to my critical philosophy.

### Section 38

If we consider the properties of the circle, through which this figure provides a unity for ever so many arbitrary spatial configurations, all under a single universal rule, we can't help crediting this geometrical thing with having a constitution. (Analogously, when we think about the properties of *iron*, through which it enters into countless law-governed interactions with all sorts of other kinds of stuff, we can't help crediting *it* with a

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<sup>7</sup> Crusius was alone in suggesting a middle way. It could be (he said) that a spirit which can't err or deceive originally implanted these laws of nature in us. But there is so much human error - including plenty of it in Crusius' own system! - that it seems very dangerous to rely on this line of thought. Even if some things have been instilled in us by the Spirit of Truth, we have no reliable way of distinguishing these from ones put there by the Father of Lies.

constitution or inner nature.) For example, take *any* two straight lines that intersect one another and intersect some circle (any circle you like):

The rectangle constructed with the two segments of one of the lines is equal to the rectangle constructed with the two segments of the other.

Now I ask: *Does this law lie in the circle or in the understanding?* That is: Is the basis for this law something *contained in* the figure itself, independently of the understanding, or is the situation rather that the understanding, having constructed the figure according to its concepts (a set of points equidistant from a given point) *introduces into it* this law about the chords cutting one another in geometrical proportion? When we follow the proofs of this law, we soon see that it can only be derived from the equality of the circle's radii, which is the basis for the understanding's construction of this figure. But we can replace the concept on which the circle is based by a more general one that fits every sort of conic section (the circle being just one kind); that will further the project of unifying various properties of geometrical figures under common laws; and if we take that step we shall find that all the chords that intersect within the ellipse, parabola, and hyperbola, always intersect in such a way that the rectangles of their segments always  $\checkmark$  bear a constant ratio to one another (the circle is the special case where they  $\checkmark$  are equal).

If we proceed still further, to the fundamental laws of physical astronomy, we find that the whole of the material world is governed by a physical law of mutual attraction for which the rule is: *The force of attraction decreases inversely as the square of the distance from each attracting point*, that is, as the spherical surfaces increase over which the force spreads. [Kant's line of thought is as follows. Think of gravity as radiating out from a point, exerting the same total force evenly across the surface of each imaginary sphere with that point as centre. The  $\checkmark$  surface-areas of the spheres differ with the squares of their radii, i.e. their distance from the central point; that's simple geometry. Then  $\checkmark$  the amount of gravitational force received by an object of a given size will vary with the *proportion* of its sphere-surface that it occupies, which means that it will vary inversely with the square of its distance from the gravitational source.] The simplicity of the sources of this law, which rest merely on the relation of spherical surfaces of different radii, is matched by what follows from it, namely such a splendid variety and harmony of consequences that not only are all possible orbits of the celestial bodies conic sections, but these orbits are inter-related in such a way that no law of attraction other than the inverse-square one can be *imagined* as appropriate for a cosmic system.

So here is a nature that rests on laws that the understanding knows *a priori*, and chiefly from the universal principles of the geometry of space. Now I ask:  $\checkmark$  Do the laws of nature lie in space, and does the understanding learn them merely by trying to discover the great wealth of meaning that lies in space; or  $\checkmark$  do they inhere in the understanding and in how it configures space . . . ?

Because it is so uniform and so indeterminate in its particular properties, one wouldn't look to *space* for a store of laws of nature. In contrast with that, there is no threat of uniformity in the understanding! What imposes circles, cones and spheres on space is *the understanding*, in its role as provider of the basis for of the constructions of those figures.

So the mere universal form of intuition - we call it 'space' - is the underlay of all intuitions of particular objects. There's no denying that  $\checkmark$  space makes the  $\checkmark$  intuitions

possible in all their variety; but the unity of the *Y*objects - or rather the unity among the intuitions that enables them to qualify as intuitions *of* objects - comes not from space but entirely from the understanding, in accordance with conditions that lie in its own nature. And so the understanding is the origin of the universal order of nature, in that it brings all appearances under its own laws, and thereby constructs the formal aspects of experience *a priori*, so that nothing can be known by experience except what conforms to the understanding's laws. The nature of *Y*things in themselves is independent of the conditions of our sensibility and our understanding; but our concern is not with that but rather with *Y*nature considered as an object of possible experience; and here the understanding, by making experience possible, brings it about that the world of the senses either is *nature* (in my sense, as given in section 14 above) or is *not an object of experience at all*.

### **Section 39: Appendix to the pure science of nature: Of the system of the Categories**

Nothing can be more desirable for a philosopher than to take the multitude of concepts or principles that he has found himself applying in particular cases, and to derive them *a priori* from a single principle, thus uniting them all into a single cognition. Before that, all he had was the belief that he had gathered together all the concepts or principles that remained after a certain abstraction, and that seemed to resemble one another enough to constitute a particular kind of knowledge; but what he had gathered was only an aggregate - a disorderly heap. Now, after his derivation from a single principle, *Y*he knows that this kind of knowledge involves *just these* concepts or principles, neither more nor less, *Y*he understands that his classification of them is necessary, and, at last, *Y*he has a *system*.

You don't need harder thought or more insight to

search out in our daily knowledge the concepts which, though they don't rest on any particular experience, occur in all experiential knowledge of which they are (as it were) the mere form of connection,

than you do to

search out in a language the general rules of the actual use of words, and thus collect elements for a grammar.

In fact the two researches are very closely related. Though a difference between them arises from the following fact: we cannot give a reason why each language has just this and no other grammatical structure, let alone why its formal rules are *just these*, neither more nor less.

Aristotle collected ten pure elementary concepts under the name of 'categories' and also 'predicaments'. He then found that he had to add to his list five 'post-predicaments' (though some of them were already contained in the first ten); but this random collection should be applauded more as a hint for future enquirers than as an idea developed according to a rule; which is why in philosophy's present more advanced state it has been rejected as quite useless.

In my research into the elements of human knowledge that are pure (contain nothing empirical), my first success - achieved after long thought - was to distinguish and separate the pure elementary concepts of *sensibility* (space and time) from those of the *understanding*. Thus Aristotle's categories of time, space, and place had to be excluded because they pertain to sensibility, not understanding, and so are not categories. And the others on his list were useless to me, because associated with them there was no principle

on the basis of which the understanding could be surveyed in its entirety, making possible a complete and precise account of all the things it can do from which arise its pure concepts - its categories.

Wanting to discover such a principle, I looked about for an act of the understanding that contains all its other acts, and brings all the variety of representations into the unity of thinking in general through their being versions or variants of that one kind of act. The desired act of the understanding turned out to be: *judging*. Then I availed myself of the work of the logicians, imperfect though it was. With its help I became able to present a complete list of the pure functions of the understanding [= 'basic kinds of thing the understanding can do'], considered at first without any reference to any object to which they might be applied. The last step was to relate these functions of the understanding - that is, these versions or variants of - judging, to the conditions that determine whether a given judgment is objectively valid. And so there arose the *pure concepts of the understanding*, concerning which I could make certain that just exactly *these* on my list - neither more nor less - settle what knowledge of things we can have on the basis of pure understanding. It was all right for me to call them by their old Aristotelian name, *categories*. . . .

What distinguishes this system of categories from the old unprincipled random collection of concepts, and what alone entitles it to be considered as philosophy, is this essential fact about it: *By means of it the true significance of the pure concepts of the understanding, and the condition of their use, could be precisely determined*. For here it became obvious that in themselves the categories are nothing but logical functions, corresponding to logical kinds of judgment, such as conditional, negative, universal, etc.; which means that they don't by themselves yield the slightest concept of an object - for *that* they need some sensory intuition as a basis. Their only role, therefore, is to shape up empirical judgments . . . . enabling them to become judgments of experience.

Such an insight into the nature of the categories, which limits them to merely experiential use, never occurred to their first author [Aristotle] or to any of his successors; but without this insight they are quite useless and only a miserable list of names, without any explanation or rule for their use. If the ancients had ever conceived such a notion, doubtless the whole study of pure rational knowledge, which under the name 'metaphysics' has through the centuries spoiled so many sound minds, would have reached us in quite another shape, and would have enlightened the human understanding instead of - as has actually happened - exhausting it in obscure and pointless speculations, making it useless for true science.

This system of categories exhausts all the possible actions of the understanding, and so every other concept must fall under them. That puts all treatment of any object of pure reason on a systematic basis, and provides an absolutely reliable pointer or clue to how and through what points of enquiry every metaphysical endeavour must proceed if it is to be complete; for it exhausts *all* the workings of the understanding, under which every other concept must be brought. Similarly with the table of principles: we can know that *it* is complete only through relation to the system of the categories. And even in the classification of the concepts, if it is to get beyond the sort of classification that might be based on findings in the empirical psychology of the understanding, it is always the very same guiding thread, which, as it must always be settled *a priori* by the same fixed points

of the human understanding, forms a closed circle every time, leaving no doubt that if we want a *complete* philosophical and *a priori* knowledge of the object of a pure conception either of the understanding or of reason, this is the way to get it. So I couldn't neglect this clue with regard to one of the most abstract ontological divisions, namely all the differences that fall under *the concepts of something and of nothing*, and to construct accordingly a rule-governed and necessary table.<sup>8</sup>

And this system, like any true one based on a universal principle, shows its inestimable value in this, that it keeps out all foreign concepts that might otherwise slink in among the pure concepts of the understanding, and accords to every item of knowledge its proper place. Here is an example. The concepts that I arranged in a table according to the clue of the categories, under the name 'concepts of reflection', turn up among the pure concepts of the understanding in ontology, without having any permission or right to be there. The pure concepts of the understanding are concepts of *connection*, and thereby of the objects themselves, whereas the concepts of reflection have to do only with the mere *comparison* of concepts already given; so the nature and uses of the two kinds of concept are quite different; and my systematic classification of the concepts of reflection keeps them out of company where they don't belong. But the value of my putting the categories in a special table of their own will be still more obvious when we do - as I shortly shall - distinguish those concepts of the *understanding* from the transcendental concepts of *reason*. The latter are of quite another nature and origin from the former, so they must have quite another form. This separation, necessary as it is, has never yet been made in any system of metaphysics, where the concepts of reason are jumbled together with the concepts of the understanding, as though they were siblings. This mix-up was inevitable in the absence of a separate system of categories.

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<sup>8</sup> On the table of the categories that I have presented, all sorts of nice observations can be made. For instance, (1) the third arises by combining the first and second into one concept; (2) in the tables for Quantity and Quality there is merely a progress from unity to totality or from something to nothing (for this purpose the categories of Quality must stand in the order reality, limitation, total negation -and not in the order they were given in section 21-), whereas nothing like that holds for Relation and Modality; (3) just as in Logic categorical judgments are the basis of all others, so the category of Substance is the basis of all concepts of actual things; (4) just as Modality in a judgment is not a particular predicate, so the modal concepts do not serve to add anything to what is said about things, etc., etc. . . .

**THIRD PART OF THE MAIN TRANSCENDENTAL PROBLEM:  
How is metaphysics possible in general?**

**Section 40**

I have now provided an explanatory justification for  $\Psi$ pure mathematics and for  $\Psi$ pure natural science. Neither of them needed this for the sake of its own security and certainty; for pure mathematics is supported by the self-evident truth of its propositions; and pure natural science, although its ultimate sources lie in the understanding, is thoroughly supported and confirmed by experience. (Certain as pure natural science is, it can never equal mathematics in that regard, which is why it can't altogether refuse and dispense with the testimony of experience.) Both these sciences therefore needed my enquiry not for themselves but for another science, namely  $\Psi$ metaphysics.

Metaphysics is concerned not only with concepts of nature (which always find their application in experience) but also with *pure concepts of reason*, which never find application in any possible experience. No experience can tell us what is true and what false involving concepts of reason, or even whether these concepts are objectively real or mere fictions. Yet the part of metaphysics that involves them is the essential end of metaphysics - it is what the rest of metaphysics is *for* - and that is why this science - unlike the other two - needs an explanatory justification *for its own sake*. The third question now before us concerns the heart of metaphysics, its special feature, namely reason's preoccupation with itself, and its assumption that by brooding over its own concepts it can come to know about objects that it supposes to arise immediately out of those concepts without help of any kind from experience.<sup>9</sup>

Reason will never be satisfied until it has solved this problem- that is, answered the question 'How is metaphysics possible?'. Reason won't let pure understanding be used outside the domain of experience; but reason itself is destined to go beyond those confines. Every particular experience is only a part of the whole domain of experience; but *the absolute whole of all possible experience* is not itself experience, yet it is something that reason has to think about, as a problem. For reason to present this problem to itself, it needs concepts quite different from those of the understanding. The latter are applied only to items given in experience; but the concepts of reason have a use that is *transcendent*: it transcends all actual and possible experience, because it involves thinking about the completeness of all possible experience, i.e. thinking about the-totality-of-possible-experience considered as a single unified item. Such an item could not itself be given in experience.

Just as  $\Psi$ the understanding supplies *categories*, which are needed for experience, so  $\Psi$ reason supplies *Ideas*, by which I mean concepts that one must have though their objects can't be given in any possible experience. Ideas are as inherent in the nature of reason as categories are in the nature of the understanding. Ideas carry with them an illusion that could easily mislead; this illusion is unavoidable, although it can be prevented from actually leading us astray.

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<sup>9</sup> If we can say that a science is actual, at least in the thinking of all men (-subjectively actual-), as soon as we have established that the problems leading to it are ones that are set before everybody by the nature of human reason, . . . then we are bound to say that metaphysics is *subjectively actual* (and necessarily so), which leads us to the legitimate question: How is it (*objectively*) possible?

All illusion consists in taking the subjective ground of judgment to be objective, as though reason in its use of the Ideas were acquiring a special kind of knowledge. Reason falls victim to this, and is guilty of error, when it takes something that merely concerns Reason's own nature and mode of operation and tries to make it refer to some object in itself. The only safeguard against this temptation is for reason to know itself - to understand what is going on when it uses Ideas in a transcendent, extravagant manner that goes beyond all possible experience.

### Section 41

We must distinguish Ideas, which are pure concepts of reason, from the categories or pure concepts of the understanding; the two correspond to two sorts of knowledge that are quite different from one another in their natures, in where they come from, and in how they are used. In the fundamentals of a science that purports to cover all *a priori* knowledge, the distinction between Ideas and categories is crucial. If we don't respect it, metaphysics will be absolutely impossible - or at best a random, bungling attempt to build a house of cards in ignorance of the materials one is using and of what they are good for. If my *Critique of Pure Reason* had done nothing but make this distinction plain for the first time, it would have contributed more to our grasp of metaphysics - what it is, and how it should be conducted - than all the fruitless efforts to do justice to the transcendent problems of pure reason that had ever before been undertaken. Before the *Critique* no-one had even suspected that reason was quite different from understanding; so everybody ran the two together, mentioning concepts of the understanding and concepts of reason in the same breath, as though they were of the same kind.

### Section 42

All instances of pure knowledge by the understanding have this in common: although they are not derived from experience, they involve concepts that can have application in experience, and principles that can be confirmed by experience. Transcendent knowledge by reason contrasts with this. The Ideas that it involves cannot be applied in experience, nor can its propositions ever be confirmed or refuted by experience. If any errors creep into the employment of reason, they will have to be discovered by pure reason itself - because neither sensibility nor understanding can have anything to do with them. For reason thus to stand guard over itself is very difficult, because the reason that is standing guard is the very faculty that is necessarily prone to intellectual illusions, and we have no firm objectively grounded procedure for avoiding them - only a subjective enquiry into reason itself as a source of Ideas.

### Section 43

My chief aim in the *Critique* was not only to distinguish carefully the several sorts of knowledge but also to derive from their common source the concepts belonging to each of them. I did this so that by knowing the origins of these concepts I could settle how they might safely be used; and it also gave me the priceless though unexpected advantage of knowing, *a priori* and in a principled way, that my list of concepts, and my classification and descriptions of them, are complete. Without this, everything in metaphysics is a mere

jumble, in which you never know whether you have enough for your purpose, or whether and where something is still lacking. This advantage is the very essence of pure philosophy, and is not to be had anywhere else.

I have derived the twelve categories - the four trios of pure concepts of the *understanding* - from a classification of kinds of judgment that can be made. The concepts of reason are three in number, and they derive from a classification not of *judgments* but of *logical arguments* - specifically, the three kinds of *inferences of reason*. For these pure concepts of reason (the transcendental Ideas) are given - we simply *do* have them - and if one doesn't want to regard them as something like *innate*, the only source that can be found for them is the activity of reason. That activity in its concern with logical form constitutes the logical element of the inferences of reason; but it also involves recognizing judgments of the understanding as involving this or that *a priori* form of judgment, and in this role it yields transcendental concepts of pure reason.

The basic sorts of argument are: categorical, conditional, and disjunctive. [A categorical argument is one whose first premise is of the form '(Subject) is (Predicate)'; a conditional one has a premise of the form 'If P, then Q'; a disjunctive one has one of the form 'Either P or Q'.] Each Idea involves the thought of a kind of *completeness*. So the Ideas - the concepts of pure reason - are as follows.

•Categorical: the Idea of a complete subject (the Idea of *what is substantial*); this is the Idea of an ultimate 'thing which . . .', like Locke's idea of substance in general; this Idea is psychological because the natural home ground of this thought is in application to oneself: I am a thing which . . .

•Conditional: the Idea of a complete series of conditions - e.g. the thought of all the causes of the present state of the world; this Idea is cosmological.

•Disjunctive: the Idea of a complete reality that somehow encompasses the entire range of what is possible; this Idea is theological.<sup>10</sup>

All three give rise to *dialectics* - that is, to characteristic dangers of intellectual illusion, insoluble problems, lurking contradictions, and the like. But their ways of doing so are different, and so we have - corresponding to the trio

•Categorical, •Conditional, and •Disjunctive

- a three-part division of the dialects of pure reason into

its •Paralogism, its •Antinomy, and its •Ideal.

Through this way of coming at things we can feel assured that all the claims of pure reason are completely represented, nothing missed, because we have completely surveyed the faculty of reason itself, from which they all take their origin.

## Section 44

It should be borne in mind that the Ideas of reason, unlike the categories, are of no use to us in bringing the understanding to bear on experience. In the knowledge of nature by the

<sup>10</sup> In disjunctive judgments we consider *the whole range of what is possible* as divided in respect to some particular concept. The ontological principle that *every object falls under one or the other out of each contradictory pair of predicates*, which is also the principle of all disjunctive judgments, essentially relies on this thought of the sum of all possibility - which goes with the thought that every possible object is completely determinate, because it falls under just one out of each contradictory pair of predicates. . . .

understanding, the Ideas of reason are entirely dispensable; indeed they are a positive obstacle to what is going on. (They have, however, their own good use, which we shall come to later.) The psychological Idea of reason brings up the question ‘Is the soul a simple substance or not?’ The answer to that is of no interest when we are doing empirical psychology. No possible experience could be evidence for either answer to the question. So far as the description and explanation of our mental histories is concerned, the concept of *simple substance* is quite empty. As for the questions raised by the cosmological Idea - Did the world begin? Will it end? - answers to these can have no role whatever in explaining any event *in* the world. As for the theological Idea: there is a correct maxim of natural science that says that we should not try to explain how nature is by appealing to the will of a highest being, because such an explanation would no longer be natural science, but rather an admission that we have reached the end of it. So the proper use of Ideas of reason must be quite different from the use of the categories, that is, the pure concepts of the understanding through which experience becomes possible.

Now, reason and understanding are related with one another in a certain manner, which brings in some parts of my laborious analytic of the understanding [that is, the part of the *Critique of Pure Reason* labelled ‘Transcendental Analytic’]. How? Well, it cannot have to do with the business of getting knowledge of nature through experience: the part reason plays in that - in mathematics and natural science - can be perfectly well played without all this subtle examination of the nature and functions of the understanding. So my analytic of the understanding must link with the Ideas of pure reason for a purpose that lies beyond the empirical use of the understanding. So now we have a dilemma. On the one hand, I have said that we cannot use the understanding outside the realm of experience, as that would be a meaningless activity, with no subject-matter. On the other hand, the nature of reason must conform with the activities of the understanding, contributing to their perfection and not disturbing them.

Here is the solution - the truth about what reason has to do with understanding. What pure reason does is to demand that understanding, when it is brought to bear on the complex of experience, shall achieve *completeness* in its operations. This, however, is only a completeness of principles, not of intuitions and objects. To put the point in simpler terms: The demand for completeness says ‘As long as there is something you don’t yet understand, keep working on it’; it does not say ‘Aim to grasp the whole story all at once: survey the mind in such a way that you have all its properties on one side and the ultimate subject that bears those properties on the other; arrive at results about the world’s entire past and entire future; think in a concrete way about God as the explanation of the entire world’. The illusion - which brings the risk of error - comes from the fact that reason, wanting to make its demand for completeness as sharp and graspable as possible, slips into treating it as though it were a demand for knowledge of something - the ultimate subject of mental states, the world’s whole past, etc.

#### **Section 45: Prefatory Remark to the Dialectic of Pure Reason**

I have shown in sections 33 and 34 that the freedom of the categories from any input from the senses may mislead reason into extending their use, quite beyond all experience, to things as they are in themselves as distinct from things as they appear to us; though no such use is legitimate, for the following reason. Because the categories lack any sensory

element that can give them meaning or sense in particular cases, they can represent *anything* in their role as mere logical functions; but there is *nothing* about which they can, unaided, give specific information. The fancy objects which reason wrongly tries to bring under the categories are known as 'noumena', or pure beings of the understanding (or better, beings of thought). Examples include

*substance* - but conceived without permanence in time,

*cause* - but not conceived as acting in time,

and so on. In thinking or talking like this one attaches to these supposed objects predicates whose only legitimate use is to enable experience to conform to laws; and yet by leaving *time* out of it one deprives them of all the conditions of intuition that have to be satisfied for experience to be possible, and so these concepts lose all meaning again.

There is no risk, however, that the understanding, when left to itself and not given orders from the outside, will so wantonly roam out of its own proper territory into that of mere creatures of thought. But the empirical use of the rules of the understanding is conditioned, and reason cannot be fully satisfied with that; so it demands a *completion* of this chain of conditions. This forces the understanding to leave its proper domain so that it can do two things: represent objects of experience in a series that stretches too far for any experience to capture it, and look completely outside itself for noumena to which it can attach that chain, thus completing the series, escaping from the conditions of experience, and making its hold complete. So there they are - the transcendental Ideas. They are in themselves virtuous, though they can make trouble; but the trouble can be averted. They don't try to produce concepts that are in themselves excessive or extravagant; all they aim for - in conformity with the true but hidden goal to which our reason is naturally drawn - is a limitless extension of the empirical use of the categories. But through an unavoidable intellectual illusion they may seduce the understanding into using the categories in a *transcendent* manner, that is, in a manner that is not related to experience. Deceitful as this misuse is, it is hard to avoid. To keep yourself from it and confine the categories within the bounds of experience, it won't do merely to resolve in advance to be on your guard against doing so. What you need is scientific instruction on how to avoid the trouble, and even then it takes hard work.

## I. The psychological Ideas

### Section 46

People have long since remarked that in all substances the proper subject -

namely, the *substantial* as such, that is, what remains after all the qualities (as predicates) are set aside

- is unknown, and this limit on our knowledge has been the topic of various complaints. But if our understanding at fault in this matter, it is not for its *inability* to know - to determine by itself - the substance of things, but rather for its *wanting* to know the substance of things, thereby treating a mere Idea as though it were a given object into whose nature one might enquire. Pure reason demands that for every predicate of a thing we seek its proper subject; but this subject must itself be nothing but a further predicate, so reason tells us to find a subject for it in its turn, . . . and so on, indefinitely (or until we give up). So we are never to regard anything that we arrive at as an ultimate subject: and our understanding can never have the thought of *the substantial* itself, however deeply it

penetrates and even if all of nature is unveiled to us. That is because the special characteristic of our understanding is that when it thinks something it does so by representing it through concepts, and thus through mere predicates; so it can never reach the absolute subject - the sheer *thing*, not understood as thing-that-is-F for any predicate F. Hence all the real properties through which we know bodies are mere qualities of them; and that includes impenetrability, which we can only represent to ourselves as the effect of a power whose subject is unknown to us.

Now, it appears as if we *do* confront this absolute subject in our consciousness of ourselves (of the thinking subject), and indeed that we have this in an immediate intuition; for all the predicates of inner sense refer to the *I* as a subject, and I cannot conceive myself as the predicate of some other subject. So it *seems* that we are given in experience something that completes the process of relating given concepts predicatively to a subject - given it not merely as an idea but as an object, that is, the absolute subject itself. But this turns out to be a false hope. For the *I* is not a concept,<sup>11</sup> but only a designation of the object of inner sense insofar as we know it by no further predicate. So it can't itself be a predicate of any other thing, any more than it can be a determinate concept of an absolute subject; all it is is a relating of inner phenomena to their unknown subject. Yet this Idea (which does excellent service as a regulative principle, totally destroying all materialistic explanations of the inner phenomena of the soul) leads through a wholly natural misunderstanding to a highly plausible argument: from this supposed knowledge of the substantial status of our thinking being the argument infers conclusions about *the nature of the soul* - the nature of it that lies right outside the compass of experience.

### Section 47

We may call this thinking self (the soul) *substance*, as being the ultimate subject of thinking that can't be further represented as the predicate of something else; but the concept of substance, in this use of it, remains quite empty, with nothing following from it, if it can't be shown to involve *permanence* - which is what makes fruitful the concept of substances that we encounter in experience.

But permanence can never be proved on the basis of the concept of a substance considered as a thing in itself, but only in relation to experience. This is adequately shown by the first Analogy of Experience in the *Critique of Pure Reason*. If that proof doesn't convince you, try for yourself whether you can derive from the concept of a *subject that does not exist as the predicate of another thing that its existence is thoroughly permanent* and that it cannot - unaided or through any natural cause - either come into existence or be annihilated. Synthetic *a priori* propositions such as *that* can never be proved of things in themselves, but only in application to things as objects of possible experience.

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<sup>11</sup> If the representation of self-awareness, the *I*, were a concept through which something could be thought, it could be used as a predicate of other things or would contain such predicates in itself. But it is nothing more than the feeling of something existing, without the slightest concept of it; it is only the representation of *that to which all thinking relates*.

## Section 48

So if we want to use the concept of the soul as substance as a basis on which to conclude that the soul is permanent, we can do this only in relation to possible experience; if we take the soul to be a thing in itself, and look for a conclusion that holds good beyond the bounds of all possible experience, permanence cannot be shown. But all our possible experience requires us to be alive; so the only permanence-of-the-soul result we can establish is that the soul is *permanent throughout one's life*; for the death of man is the end of all experience that the soul could have of itself as an object - unless the contrary is proved, but that 'contrary' is supposed to be the conclusion of the argument for the soul's permanence, so it can't appear among the premises. The most we can show, therefore, is that the soul is permanent throughout one's life - a result that nobody will disagree with! What we want is to show that the soul lasts after death, and this we cannot do, for the reason I have given: the necessary tie between the concept of substance and the concept of permanence is created by the principles of possible experience, and so it holds good only within the domain of possible experience.<sup>12</sup>

## Section 49

Here is something else that can be proved as a requirement for the intellectual management of experience, but can't be shown to hold of things in themselves: *Our outer experience not only does but must correspond to something real outside of ourselves.* That tells us this much: there is something empirical - thus, some phenomenon in space outside us - the existence of which can be satisfactorily proved. That is all it tells us, for we have no dealings with objects other than those belonging to possible experience; because objects that can't be presented to us in any experience are nothing to us. What is empirically outside me is what appears in *space*. Now space, together with all the phenomena it contains, belongs to the representations whose objective truth is proved by how they are inter-connected according to laws of experience, just as the actuality of my soul (as an object of inner sense) is proved by how the phenomena of inner sense are inter-

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<sup>12</sup> It is indeed very remarkable that metaphysicians have always glided comfortably over the principle that *substances are permanent* without trying to prove it. No doubt this is because as soon as they started on the concept of substance they found that every possible basis for a proof had deserted them. Common sense, which strongly felt that perceptions couldn't be unified in experience without this presupposition of the permanence of substance, filled the gap by a postulate. (It had to *postulate* permanence instead of *proving* it, because it could never derive the necessary permanence of substance from experience itself, for two complementary reasons. (1) We have no way of tracking substances through all their alterations and dissolutions and finding empirically that their matter, their *stuff*, is never lessened. (2) The principle in question involves *necessity*, which is a sure sign of its being an *a priori* principle and thus not knowable through or provable from experience.) People then optimistically applied this postulate about all substances to the concept of soul as a *substance*, and inferred from this that a man's soul must continue in existence after his death (especially because this substance's having no *parts* - which they inferred from the indivisibility of consciousness - guaranteed that it couldn't be destroyed by falling to pieces). If they had found the genuine source of this principle of the permanence of substance - a discovery requiring deeper researches than they were ever inclined to make - they would have seen that the law of the permanence of substances holds good only for the purposes of intellectually managing experience; so it applies to things only so far as they are to be known and conjoined with others in experience. It never applies independently of all possible experience, and consequently it cannot hold good of the soul after death.

connected. Accordingly, it is by outer experience that I am conscious of the actuality of bodies, as external phenomena in space, just as by inner experience I am conscious of the existence of my soul in time; but I know this soul only as an object of inner sense - knowing it only through appearances that constitute my inner state; the nature of the soul in itself - the thing that *has* these phenomena - is unknown to me. So all that *Cartesian idealism* achieves is to distinguish outer experience from dreaming; and to distinguish the conformity to law that is a criterion of the truth of the former from the irregularity and false illusion of the latter. In dealing with both outer experience and dreaming, Cartesian idealism presupposes space and time as required for the existence of objects; its only question is this:

Are the objects of the outer senses, which when awake we put in space, actually to be found in it (as the object of inner sense, the soul, is actually to be found in time)?

That amounts to this:

Does experience carry with it sure criteria to distinguish it from imagination?

Doubts about this can easily be disposed of. We dispose of them in ordinary life every time we investigate how appearances in both space and time are connected according to universal laws of experience: when the representation of outer things agrees thoroughly with those laws we can't doubt that they constitute truthful experience. So it is very easy to refute *material idealism*, which questions the existence of bodies, although it does not think of them as things in themselves, but considers appearances *as appearances* and takes account only of how they are connected in experience: it is just as sure an experience that bodies exist outside us (in space) as that I myself exist according to the representation of inner sense (in time); I put it like that because the concept of *outside us* means just *existing in space*. Compare these two:

taking 'body' to refer not merely to outer intuition (in space) but to the thing-in-itself that is the basis of this appearance - the thing that the appearance is an appearance of,

and

taking the 'I' in the proposition 'I am' to refer not merely the object of inner intuition (in time) but to the subject of consciousness - the thing that *has* the consciousness.

The 'body' thought generates the question of whether bodies (which are really phenomena of outer sense) exist as bodies in nature *apart from my thoughts* - a question that can be briskly answered in the negative. The 'I' thought generates the question of whether I myself (an appearance of inner sense, the soul that empirical psychology studies) exist apart from my faculty of representation in time; and this question is on exactly the same footing as the other, and must likewise be answered in the negative.

*Everything* is decided and certain in this way, once it has been given its true meaning, Formal idealism (which I have also called 'transcendental idealism') actually abolishes material (or Cartesian) idealism. For if space is nothing but a form of my sensibility, then it is - *as a representation in me* - just as actual as I myself am; and the only remaining question concerns the empirical truth of the representations in space. And if on the other hand space and the phenomena in it are something existing outside us, then the actuality of these alleged objects outside us can never be proved in the way it would *have to be*

proved, namely· by applying the criteria of experience beyond the domain of our perception.

## II. The cosmological Idea

### Section 50

The cosmological Idea is the most remarkable product of pure reason in its transcendent use. It has more power than anything else to rouse philosophy from its dogmatic slumber and to stimulate it to a hard task, namely making a critique of reason itself.

I term this Idea ‘cosmological’ because it never takes its object from anywhere but the world of the senses, having no use for anything that is not given to the senses. So in that way it *stays at home*, does not become transcendent, and is to that extent not a mere Idea. (Whereas the psychological Ideas do not in that sense ‘stay at home’, because merely conceiving the soul as a *simple substance* involves conceiving something - the simple - that cannot be presented to the senses.) Despite that, the cosmological Idea does in its own way go outside the domain of the senses, because it extends the connection of the conditioned with its condition so far that experience never can keep up with it. In this way, then, it is always an Idea, whose object can never be adequately given in any experience.

### Section 51

Note first that in this territory of the cosmological Ideas the usefulness of a *system of categories* is so obvious and unmistakable that this alone would show that it is indispensable in the system of pure reason, even if there weren’t several other proofs of it. There are exactly four such transcendent Ideas, and exactly four classes of categories; but the Ideas differ from the categories in that they are concerned only with the *absolute completeness* of the series of the conditions for a given conditioned item. Matching these cosmological Ideas there are exactly four kinds of *dialectical assertions* of pure reason. Their being dialectical shows in this:

Against each of these assertions we can bring its contradictory, on the strength of principles of pure reason that are as plausible as those supporting the original assertion.

No subtle exercise of the metaphysical art can guard us against this conflict between the assertion and its contradictory except the one that compels the philosopher to look into the first sources of pure reason itself. This Antinomy - that is, this systematic conflict between dialectical assertions and their contradictories - is not something I thought up to amuse myself: it is grounded in the nature of human reason, which means that it can’t be avoided or brought to an end. The Antinomy contains the following four *theses* together with their *antitheses*:

1. Thesis: The world has a *beginning* in time and space (a limit).  
Antithesis: The world is spatially and temporally *infinite*.
2. Thesis: Everything in the world consists of elements that are *simple*.  
Antithesis: There is nothing simple; everything is *composite*.
3. Thesis: There are in the world causes through *freedom*.  
Antithesis: There is no liberty, but all is *nature*.

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

### Section 52a

We have here the strangest phenomenon of human reason; no other use of reason produces anything like it. If we think of the appearances of the world of the senses as things in themselves (as we often do), and if we take them to be combined through principles that hold universally for things in themselves rather than merely through principles of experience (which we also often do - indeed without my critique we can't help it!), there arises an unexpected conflict that never can be removed in the usual dogmatic way - by proving one side in the conflict and refuting the other. That won't work, because thesis and antithesis can *both* be shown by equally clear, evident, and compelling proofs (I guarantee that all the proofs *are* correct), so reason sees that it is divided against itself - a state of affairs that gladdens the heart of the sceptic but must make the critical philosopher pause and feel ill at ease.

### Section 52b

We can blunder in various ways in metaphysics without any fear of being detected in falsehood. For as long as we avoid self-contradiction, which we can always do when we assert synthetic propositions (even if they are wholly fictitious), our only way of being detected in falsehood is through experience. And experience can't refute us when we assert propositions of the sort involved in metaphysics, namely ones in which the concepts that are involved are mere Ideas, instances of which can't be presented to us in experience. For how can we tell from experience whether the world has lasted from eternity or had a beginning, whether matter is infinitely divisible or consists of simple parts? Such concepts can't be instantiated in any experience, however extensive, and consequently neither the positive nor the negative proposition in the antinomy can be empirically discovered to be false.

The only way in which reason could unintentionally reveal its secret dialectic, which it falsely offers as positive doctrine, would be for this to happen:

Reason bases an assertion on a universally admitted principle, and infers the exactly opposite assertion, with the greatest correctness of argument, from another principle that is equally accepted.

This what actually *does* happen in our present case of the four natural Ideas of reason, from which arise four assertions and four counter-assertions, each validly derived from universally accepted principles, thus revealing the *dialectical illusion of pure reason* in the use of these principles - an illusion that would otherwise have stayed hidden for ever.

So this is a decisive experiment, which must necessarily reveal to us any error lying hidden in the presuppositions of reason.<sup>13</sup> Contradictory propositions cannot both be false

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<sup>13</sup> I should therefore like the critical reader of the *Critique of Pure Reason* to attend especially to this antinomy of pure reason, because nature itself seems to have arranged it to pull reason up short in its bold claims, and to force it to look into itself. I take responsibility for every proof I have given for the thesis as well as for the antithesis, and thereby promise to show the certainty of the inevitable antinomy of reason. If this curious phenomenon of the 'proofs' of both P and not-P leads you to go back to examine the

unless they both involve some self-contradictory concept. And then they *can* both be false. For example *A square circle is round* is false (it is false that the circle is round, because it is square), and *A square circle is not round* is likewise false (it is false that the circle is not round, i.e. that it has corners, because it is a circle.) The logical mark of the impossibility of a concept consists precisely in this, that two contradictory propositions involving it are both false, and as no third proposition can be thought between them, *nothing at all* is thought through that concept.

### Section 52c

The first two antinomies, which I call ‘mathematical’ because they are concerned with the addition or division of the homogeneous, are based on such a self-contradictory concept; and that is how it comes about that in each of them both the thesis and antithesis are false.

When I speak of objects in time and in space, I am speaking not about *things* in themselves (of which I know nothing), but about *things* in appearance, that is, about experience as a particular way of knowing objects - the only way of knowing them that has been granted to mankind. When I think of something as being in time or in space, I must not say or think:

*In itself it exists in space and in time, independently of these thoughts of mine;* for if I did I would be contradicting myself. That is because space and time, together with appearances in them, are nothing existing in themselves and outside my representations, but are themselves only modes of representation [= ‘ways of being represented-to’], and it is plainly contradictory to say that a mere mode of representation exists outside our representation. So objects of the senses exist only in experience; and to attribute to them a self-subsisting existence *apart* from experience or *in advance* of it amounts to telling ourselves that *experience* is real *apart* from experience or *in advance* of it!

Now if I ask about the extent of the world in space and in time, my complete stock of concepts doesn’t enable me to call it infinite or to call it finite. For neither state of affairs can be contained in experience: there cannot be experience of an *infinite* space, or of an infinite time elapsed; or of the world’s being *bounded* by empty space or by empty time before the world began - all these are mere Ideas. This finite or infinite size of the world, not being cashable out in terms of experience, would therefore have to belong to the world itself *apart* from all experience. But this contradicts the notion of *a world of the senses*, which is merely a totality of appearances that exist and are inter-connected only in our representation, that is, in experience, since *this world* is not an object in itself but a mere mode of representation. From this it follows that the answer ‘Yes’ to the question ‘Is the world finite in space or in time?’ is false, and so is the answer ‘No’; because the concept of *a world of the senses existing for itself and in itself* is self-contradictory,

The same holds good for the second antinomy, concerning the division of appearances. For these appearances are mere representations, and their parts exist only in the representation, and consequently exist only *in the dividing*, that is, in a possible experience that presents them; and the dividing can go only as far as this experience goes.

presupposition on which it is based, you will feel yourself obliged to join me in inquiring more deeply into the ultimate basis of all knowledge of pure reason.

If you assume that an appearance, such as that of a body, contains - in itself, in advance of all experience - all the parts that any possible experience can ever reach, what you are doing amounts to this:

Attributing to a mere appearance, which can exist only in experience, an existence preceding experience; or saying that mere representations are *there* before we encounter them through our faculty of representation.

This is self-contradictory, and consequently so is each answer to the misconceived question about divisibility, whether we answer that bodies in themselves consist of infinitely many parts, or that they have a finite number of simple parts.

### Section 53

In the first (the mathematical) class of antinomies the falsehood of the assumed proposition consisted in taking contradictory items (appearance, thing in itself) to be harmoniously compatible within a single concept. In this second (dynamic) group, on the other hand, the falsehood of the assumed proposition consists in taking a consistent pair of propositions to be mutually contradictory. Thus, in the first class of antinomies the opposed assertions were both false, while in the second class the two propositions - which are treated as opposed to one another through mere misunderstanding - may both be true.

Connecting items mathematically through the concept of spatial or temporal size requires that the connected items be of the same kind; but dynamic connections by no means require that kind of homogeneity. When it comes to extended magnitudes - that is, stretches of space or of time - all the parts must be homogeneous with one another and with the whole; but in the connection of cause and effect, although homogeneity may be found there too, it isn't necessary. Or at any rate the concept of causality doesn't require it, because cause-effect has to do with positing something through something else quite different from it.

If the objects of the world of the senses were taken for things in themselves, and the laws of nature discussed above were taken to be laws of things in themselves, contradiction would be unavoidable. Similarly, if the subject of freedom were taken to be a mere appearance, like other objects, contradiction would be equally unavoidable, for the same predicate taken in the same sense would be at once affirmed and denied of one and the same object. But if *natural necessity* is tied only to appearances, and *freedom* only to things in themselves, there is no contradiction in assuming or allowing both kinds of causality at once, however hard or impossible it may be to make the latter kind (freedom) comprehensible.

In the realm of appearance every effect is an *event*, something that happens in time; so according to the universal law of nature it must be preceded by a cause, some state of which leads to the event according to a constant law. But the cause's *entering into this state* that gives it its causal power must likewise *take place or happen*; the cause must have *begun to act*, for without that the effect's following from it cannot be conceived. Without such a beginning, the effect, as well as the effectiveness of the cause, would have to have existed always. This yields the result:

¶The state of the cause that makes it effective must also have started among appearances, being an *event* (just as the effect is), and so have been caused in its turn, and so on backwards for ever.

Which in turn yields the further result:

¶The condition that governs the coming-into-effectiveness of causes must be natural necessity.

If on the other hand, certain causes of appearances have the property of being *free*, then freedom must be a capacity for starting these appearances - these events - *spontaneously*; there is no such event as the cause's *starting to be effective*, and thus no need for anything outside the cause to prod it into starting to be effective. But in that case the cause must have its effectiveness in a manner that doesn't place it in time; so it can't be an appearance, and must be considered a thing in itself, with only its effects being appearances.<sup>14</sup> If we can without contradiction think of beings of the understanding - choices, decisions, etc. - as exercising such an influence on appearances, then that enables us to have the second part of the following two-part story:

¶Natural necessity is what links all causes to all effects when both cause and effect belong in the world of the senses.

¶Freedom is possessed by any cause that is not itself an appearance though it underlies an appearance.

So *nature* and *freedom* can without contradiction be attributed to the very same thing, but in different relations - on one side as an appearance, on the other as a thing in itself.

We have in us a faculty that is not merely

¶connected with its subjective determining grounds that are the natural causes of its actions, and is in that way the faculty of a being that belongs to appearances,

but is also

¶connected to objective grounds (that are only Ideas), being connected to them in that they can determine [here = 'influence'] this faculty - a connection expressed by the word *ought*.

To spell that out a little in more familiar terms: When a person decides how to act on some occasion, the question 'Why did he make that decision?' - a request to know what *determined* him to make it - can have answers to two entirely different kinds. ¶One kind explains the decision in terms of his prior state of mind, and the psychological laws that

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<sup>14</sup> The only acceptable use of the Idea of freedom is in thinking about the relation of the *intellectual* (as cause) to *appearance* (as effect) - the relation between what a *person chooses* and how *his body moves*. So the incessant action through which matter fills its space - acting so as to keep other matter out of that place - though it takes place from an internal principle, can't be an exercise of freedom. Nor can we find a concept of freedom that is suitable for purely rational beings such as God. For his action, though independent of external determining causes (because it is only his immanent or caused-from-within action that I am talking about), is determined in his eternal reason, that is, in the divine nature which never changes. It is only if something is to *start* by an action, so that the effect occurs in the time-series or in the world of our senses (e.g., the beginning of the world), that the question arises of whether ¶the effectiveness of the cause must in its turn have been *started*, or whether instead ¶the cause can initiate an effect without its own effectiveness *beginning*. In the former case the concept of this causality is a concept of *natural necessity*, in the latter, that of *freedom*. From this you will see that in explaining freedom as the faculty of starting an event spontaneously I have exactly hit the notion which is the problem of metaphysics.

led from that to his decision. ¶The other kind explains the decision in terms of his *reasons* for it, his beliefs about what he *ought* to do. The former kind of answer invokes natural necessity; the second doesn't, because it doesn't explain the decision as an event arising from prior events; it is the second that takes us out of the realm of appearance, and makes room for freedom. This faculty - the one involved in the second kind of answer - is called *reason*, and, to the extent that we consider a man exclusively in the light of his reason viewed as responding to objective judgments about what he *ought* to do, to that extent we are not viewing him as a being of sense - an inhabitant of the world of our senses - because this freedom or responsiveness to the 'ought' thought is a property of a thing in itself. We can't at all grasp how it is possible - that is, how the *ought*, which is not an event, not something that has *happened*, can determine the man's activity, becoming the cause of actions which *are* things that *happen*, and whose effect is an appearance in the world of the senses. Still, although we don't grasp *how* this can be, if reason did relate in this 'influencing' way to a person's decisions, that would bring *freedom* into what happens in the world of the senses to the extent that we can see those happenings as influenced by objective grounds (which are themselves Ideas). For reason's effectiveness as a cause wouldn't depend on subjective conditions - that is, on facts about the person's prior state of mind - and therefore wouldn't depend on events in time or on the law of nature that controls such events. That is because the grounds of reason - the basic 'ought' thoughts - govern actions in a universal way, according to universal principles, without influence from the circumstances of either time or place.

What I am presenting here is meant merely as an example to make things intelligible. It does not necessarily belong to our problem - that is, the question *How is metaphysics in general possible?* - which must be decided from mere concepts, independently of the properties that we meet in the actual world.

Now I can say without contradiction that ¶all the actions of rational beings, so far as they are appearances, fall under ¶the necessity of nature; but ¶those same actions, considered purely in terms of the rational subject and its ability to act according to mere reason, are ¶free. For what is required for the necessity of nature? Only that every event in the world of the senses come about in accordance with constant laws, thus being related to causes in the domain of appearance; and in this process the underlying *thing in itself* remains out of sight, as does its causality. But I maintain this:

*The law of nature still holds*, whether or not the rational being causes effects in the world of the senses through reason and thus through freedom. If it *does*, the action is performed according to maxims whose effects in the realm of appearance are always *consistent with* constant laws; if on the other hand it *doesn't*, the action is not merely consistent with but *subject to* the empirical laws of the sensibility, and in this case as in the other the effects hang together according to constant laws.

This conformity to laws is all we *demand for* natural necessity; indeed, it exhausts all that we *know about* natural necessity. But in ¶the former case where the action is caused by reason, reason is the cause of these laws of nature rather than being subject to them, and therefore it is itself free; in ¶the latter case, where the effects follow according to mere natural laws of sensibility with reason having no input, it doesn't follow that reason is in this case *determined by* the sensibility, which indeed it couldn't be, so reason is free in this case too. Freedom, therefore, doesn't get in the way of natural law in the domain of

appearance, any more than natural law brings about a breakdown in the freedom of the practical use of reason, which relates to things in themselves as determining grounds.

Thus practical freedom - the freedom in which reason has causal force according to objectively determining grounds - is rescued, without doing the slightest harm to natural necessity in relation to the very same effects, as appearances. These remarks will serve to explain what I said earlier about transcendental freedom and its compatibility with natural necessity (with a single subject taken in two different ways). For

whenever a being acts from objective causes regarded as determining grounds of reason, the start of its action is a *first beginning*,

although

the same action is in the series of appearances only a *subordinate beginning*, which must be preceded and determined by a state of the cause, which in turn is determined by another immediately preceding it and so on backwards.

In this way we can have the thought, for rational beings and quite generally for any being whose causality is determined in them as things in themselves, of a being's ability to begin a series of states from within itself, without falling into conflict with the laws of nature. For the relation the action has to objective grounds of reason is not a temporal one; in this case what determines the causality does not precede the action in time, because determining grounds such as reason provides don't involve objects of sense such as causes in the domain of appearance, but rather determining causes as things in themselves, which do not exist in time. And so the action can without inconsistency be seen (with regard to the causality of reason) as a first beginning and as free, and (with regard to the series of appearances) as a merely subordinate beginning and as subject to natural necessity.

The *fourth* Antinomy is solved in the same way as is reason's conflict with itself in the *third*. The propositions to be reconciled in the fourth are that there is a necessary being, and that there is not. The two propositions are perfectly reconcilable provided we distinguish *the cause in the domain of appearance* from *the cause of the domain of appearance* (with the latter thought of as a thing in itself). Then one proposition says:

Nowhere in the world of the senses is there a cause (according to similar laws of causality) whose existence is absolutely necessary;

the other says:

This world is nevertheless connected with a necessary being as its cause (but of another kind and according to another law).

The incompatibility of these propositions entirely rests on the mistake of extending what is valid merely of appearances to things in themselves, and in general running the two together in one concept.

## Section 54

This then is how I *present* and how I *solve* the entire antinomy in which reason finds itself caught when it applies its principles to the world of the senses. The mere presentation would contribute a lot to the knowledge of human reason, even if the solution hadn't yet fully satisfied you - which it well might not, because you have to combat a natural illusion that has only recently been exposed to you and that you have previously always regarded as genuine. For there is no escaping from this: so long as you take the objects of the world

of the senses to be things in themselves, and not the mere appearances which is what they really are, you haven't any chance of avoiding this conflict of reason with itself; so you *must* re-examine my deduction of all our *a priori* knowledge and the tests that I put it through, in order to come to a decision on the question. This is all I require at present; for if in carrying this out you take your thoughts deeply enough into the nature of pure reason, you will familiarize yourself with the concepts through which alone the solution of the conflict of reason is possible. Unless that happens, I can't expect complete assent even from the most attentive reader.

### III. The theological Idea

#### Section 55

I have discussed the  $\Psi$ psychological Idea(s) and the  $\Psi$ cosmological Idea(s). Now:  
 The  $\Psi$ third transcendental Idea is the *ideal* of pure reason. The use of reason for which it provides material is the most important of all; though if it is pursued in a merely theory-building or speculative manner, that makes it transcendent - theorizing outside the domain of possible experience - which in turn makes it dialectical. With the psychological and cosmological Ideas, reason starts with experience, and goes wrong by taking a grandiose view of its grounds and trying to achieve, where it can, the absolutely complete series of grounds. Not so with the third, theological Idea. Here reason totally breaks with experience; and - starting from mere concepts of what would constitute the absolute completeness of a thing in general, and thus bringing in the Idea of  $\Psi$ a most perfect primal being - it works down from there to secure the possibility and therefore the actuality of  $\Psi$ all other beings. And so the mere presupposition of a being that is conceived not *in* the series of experience but *for the purposes of* experience - for the sake of comprehending its connection, order, and unity - that is, the *Idea*, is distinguished from the concept of the understanding more easily in this case than in the others. Hence we can easily expose the dialectical illusion that arises from our taking the subjective conditions of our thinking to be objective conditions of objects themselves, and taking an hypothesis necessary for the satisfaction of our reason to be an objectively established truth. I have nothing more to say here about the pretensions of transcendental theology, because my remarks about them in the Critique are easily grasped, clear, and decisive, .

#### Section 56: General remark on the transcendental Ideas

The objects given to us by experience are in many respects incomprehensible, and the law of nature leads us to many questions about them which, when carried beyond a certain point (though still in conformity with those laws), cannot be answered. For example: why do material things attract one another? But if we  $\Psi$ go right outside nature, or  $\Psi$ stay within it but in thinking about how it is interconnected go beyond all possible experience and so enter the realm of mere Ideas, *then* we cannot say that our subject-matter is incomprehensible and that the nature of things confronts us with insoluble problems. For in this case we are not dealing with nature - or, to put it more generally, we are not dealing with  $\Psi$ given objects - but with  $\Psi$ concepts that have their origin solely in our reason, and with mere creations of thought; and all the problems that arise from our concepts of

them must be soluble, because of course reason can and must give a full account of its own process.<sup>15</sup> As the psychological, cosmological, and theological Ideas are nothing but pure concepts of reason that can't be applied to anything found in any experience, the questions that reason confronts us with regarding them don't come from objects but from mere maxims that our reason lays down for its own satisfaction. It must be possible for them all, as a group, to be satisfactorily answered, which is done by showing that they are principles for bringing our use of the understanding into thorough harmony, completeness, and synthetic unity, so that they do in that way hold good for experience - but for experience as a *whole*. But although an absolute whole of experience is impossible, the Idea of *a totality of knowledge according to principles* is needed if our knowledge is to have a special kind of unity, the unity of a *system*. Without that our knowledge is nothing but piece-work, and can't be used for the highest end (which is always the establishment of a general system of all ends). I am talking here not only about *practical* or moral ends, but also about the highest end of the *speculative* use of reason.

The transcendental Ideas thus express reason's special role, namely as setting a standard for systematic unity in the use of the understanding. But if the following happens:

We see this unity in our way of knowing as attached to the object of knowledge; we take something that is merely *regulative* to be *constitutive*; and we persuade ourselves that by means of these Ideas we can extend our knowledge far beyond all possible experience (and thus in a transcendent manner),

this is *Ya* mere misunderstanding in our estimate of the proper role of our reason and of its principles, and it is *Ya* dialectic that confuses the empirical use of reason and also sets reason against itself. What makes it a misunderstanding is the fact that really reason serves merely to bring experience as near as possible to completeness *within itself*, that is, to stop its progress from being limited by anything that can't belong to experience.

## CONCLUSION

### Determining the boundaries of pure reason

#### Section 57

After the clearest arguments, which I have provided, it would be absurd for us to hope to know more of any object than belongs to the possible experience of it, or lay claim to the slightest knowledge of anything not taken to be an object of possible experience - knowledge that would tell us what the thing is like in itself. For how could we learn such facts, given that time, space, and the categories - and even more all the concepts drawn from empirical intuition or *perception* in the world of the senses - don't and can't have any use other than to make experience possible, and that even the pure categories are meaningless if they are removed from this relation to perception?

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<sup>15</sup> Herr Platner in his *Aphorisms* acutely says: 'If reason is a criterion, there can't be a concept that human reason cannot comprehend. Incomprehensibility comes up only with what is actual. . . .' So it only *sounds* paradoxical and is not really strange to say that although much in nature is beyond our comprehension (e.g. biological reproduction), if we rise still higher and go right out beyond nature everything will be comprehensible again. For then we leave behind the *objects* which can be given us, and occupy ourselves merely with *Ideas*; and here we can easily grasp the law that reason, through them, prescribes to the understanding for its use in experience, because that law is reason's own product.

But on the other hand it would be even more absurd if we rejected things in themselves, or declared that Your experience is the only possible way of knowing things, Your intuition of them in space and in time the only possible intuition, Your concept-using understanding the pattern for every possible understanding - all of which would amount to taking the principles of the possibility of experience to be universal conditions of things in themselves.

My principles, which limit the use of reason to possible experience, could in that way become *transcendent*, and the limits of our reason might pass themselves off as limits of the possibility of things in themselves (Hume's *Dialogues* illustrate this process), if a careful critique didn't *both* watch over the bounds of our reason, . . . *and* set a limit to its pretensions. Scepticism originally arose from metaphysics and its lawless dialectic. Wanting to favour the experiential use of reason, it started out by declaring that whatever transcends this use is worthless and deceitful; but little by little, as the awareness sank in that the *a priori* principles used *in* experience lead (surreptitiously, and seemingly just as legitimately) *further than* experience extends, doubt began to be placed even in the principles of experience. There is no danger in this *error*, for healthy common sense will doubtless always assert its rights *regarding experience*. But a certain confusion arose in science, which can't work out how far reason is to be trusted - and why just this far and no further? - and the only way to clear up this confusion and forestall any future relapses is through a formal, principled fixing of the boundary of the use of our reason.

It is true: we cannot rise above all possible experience and form a definite concept of what things in themselves may be. Nevertheless, we are not free to refrain entirely from enquiring into them; for experience never satisfies reason fully; rather, in answering *our* questions it points further and further back, leaving us still hungering for their complete solution. You can see this in the dialectic of pure reason, the solid subjective ground for which consists in just this hunger for completeness. As regards the nature of our soul: having a clear awareness of oneself as a subject, and having become convinced that psychological phenomena can't be explained *materialistically*, Who can refrain from asking what the soul really is? And if no concept of *experience* suffices for the purpose, Who can refrain from accounting for it by a concept of *reason* (that of a simple immaterial being), even though we are totally unable to show its objective reality? As regards all the cosmological questions about the duration and size of the world, and about freedom versus natural necessity, Who can be satisfied with mere empirical answers to these, when every answer given on empirical principles gives rise to a fresh question, which then requires an answer in its turn, and in this way clearly shows that reason cannot be satisfied by explanations relying on facts about how things go in the empirical world? Finally, Who doesn't see, from the utter contingency and dependence of everything he thinks and assumes using mere principles of experience, the impossibility of stopping with those principles? And Who doesn't feel himself compelled, despite all the prohibitions against losing himself in transcendent Ideas, to seek peace and contentment (beyond all the concepts that he can vindicate by experience) in the concept of a being the Idea of which cannot be seen to be possible, but which cannot be refuted either because it relates to a mere being of the understanding, without which *Idea* reason would remain forever dissatisfied?

Where extended things are concerned, *boundaries* always presuppose a space existing outside a certain definite place, and enclosing it; *limits* don't require anything like that, but are mere negations, indicating of some quantity that it is not absolutely complete. But our reason sees around itself *a space for knowledge of things in themselves*, so to speak, though it can never have definite concepts of them and is limited to appearances only.

As long as the knowledge of reason is all of one kind - for example, reasoning within number-theory, within geometry, within natural science, or the like - definite boundaries to it are inconceivable. In mathematics and in natural science human reason recognizes *limits*, that is, recognizes that its inner progress will never be complete; but it does not recognize *boundaries*, that is, does not recognize that outside it there is something that it can never reach. In mathematics there is no end to the enlargement of our insight or to the new discoveries that may be made; similarly in natural science, there is no end to the discovery of new properties of nature, of new forces and laws, through continued experience and unification of it by reason. So these sciences are never complete, which means that at any time they have limits. But these limits should not be misunderstood - that is, should not be thought of as boundaries - for mathematics bears only on *appearances*, and so it has no dealings with anything that can't be an object of sensible intuition, such as the concepts of metaphysics and of morals, which means that it has no dealings with anything that could be a boundary for it. Mathematics can never lead to such things, and has no need for them. So there is a continual progress and approach towards completion in these sciences, towards the point or line, so to speak, of contact with completeness. The inwardness of things doesn't show up in the domain of appearance, though the Idea of it can serve as the ultimate ground of explanation of appearances; and natural science will never reveal it to us. But it isn't needed for scientific explanations. Indeed, even if such ultimate grounds of explanation were to be offered from other sources (for instance, the influence of immaterial beings), natural science should reject them and not use them to advance its explanations. For its explanations must be based only on what can belong to experience as an object of sense and be connected with our actual perceptions in accordance with empirical laws.

But metaphysics, in the dialectical attempts of pure reason (which we do not undertake arbitrarily or wantonly, being driven to them by the nature of reason itself), leads us to *boundaries*. And the transcendental Ideas, just because we can't evade them and can never realize them in the sense of *encountering* an instance of one of them, serve not only to tell us that the pure use of reason has boundaries, but also to show us where they are. That is the purpose and function of this disposition of our reason, which has given birth to metaphysics as its favourite child; and this child, like every other in the world, is a product not of blind chance but of an original seed that is wisely organized for great purposes. For metaphysics, perhaps more than any other science, has in its main outlines been placed in us by nature itself, and cannot be viewed as the outcome of an arbitrary choice or of an accidental enlargement of our thoughts in the progress of experience - from which indeed it is wholly separate.

Concepts and laws of the understanding suffice for the empirical use of reason, that is, for the use of it within the world of the senses; but they don't satisfy *reason itself*, because it faces an infinite sequence of questions with no hope of ever completely answering them. The transcendental Ideas, which have that completion as their aim, are such problems of

reason. Now reason sees clearly that the world of the senses cannot contain this completion, neither (therefore) can all the concepts that serve only for understanding the world of the senses - space and time, and the ones I have presented under the name of 'pure concepts of the understanding'. The world of the senses is nothing but a chain of appearances connected according to universal laws; so it has no existence for itself, is not really the thing in itself, and consequently must stand in a relation to something other than itself, namely to what contains the grounds of this experience - to beings that can be known not merely as phenomena but as things in themselves. It is only in the knowledge of *these* that reason can hope to satisfy its demand for completeness in the advance from the conditioned to its conditions.

In sections 33-4 above I indicated the limits of reason with regard to all knowledge of mere creations of thought. [The word 'limits' - *Schranken* - doesn't occur in those two sections.] Now, since the transcendental Ideas have made it necessary for us to approach them, and thus have led us to the spot where occupied space meets the void, so to speak - that is, where experience touches that of which we can know nothing, namely noumena - we can settle what the boundaries are of pure reason. For in all *boundaries* there is something positive:

for example, a surface is the boundary of corporeal space, and *is itself a space*; a line *is a space* that is the boundary of a surface; a point is the boundary of a line but yet *is always a place* in space,

whereas *limits* contain mere negations. The limits pointed out in sections 33 and 34 are still not enough to satisfy us(?) once we have discovered that there is still something beyond them (though we can never know what it is in itself). For the question now arises: How does our reason conduct itself in this connection of what we know with what we don't know and never shall? There is here an actual connection of the known with something completely unknown (which will always remain so); and even if the unknown is not going to become the least bit known (and there is no hope that it will), the concept of this connection must still be capable of being identified and brought into clarity.

So we ought to have the thought of an immaterial being, a world of understanding, and a Supreme Being (all mere noumena), because it is only in these items - as things in themselves - that reason finds completion and satisfaction, which it can never hope for in deriving appearances from grounds that are homogeneous with them and therefore demand to be grounded in their turn. Another reason why we ought to have those thoughts is that appearances really do bring in to something distinct from themselves (and totally unlike them), in that appearances always presuppose an object in itself of which the appearance is an appearance, and thus they suggest its existence whether or not we can know more of it.

But as we can never *know* these beings of understanding as they are in themselves, that is, determinately, but nevertheless have to *assume* them in relation to the world of the senses and connect them with that world by means of reason, we shall at least be able to think *this connection* by means of such concepts as express their relation to the world of the senses. This *relational* approach to noumena is the best we can do. For if we think a being of the understanding through nothing but pure concepts of the understanding, we really think nothing definite, and consequently our concept has no significance; and if we think it through properties borrowed from the world of the senses, it is no longer a being

of understanding but is thought as one of the phenomena and belongs to the world of the senses. I shall illustrate this with the notion of the supreme being.

The  $\checkmark$ deistic concept - that is, the  $\checkmark$ thin concept of a (not necessarily personal) supreme being - is a wholly pure concept of reason; but all it represents is *a thing containing all realities*. It cannot pick out any one reality - thereby saying something in detail about the supreme being - because to do so it would have to use an example taken from the world of the senses, and in that case I (as a user of the concept in question) would after all be dealing only with an object of the senses, not something of a radically different sort that can never be an object of the senses. Here is an example:

Suppose that I attribute *understanding* to the Supreme Being. My only concept of understanding is one that fits understandings like mine - one that has to get its intuitions *passively* from the senses, and that occupies itself *actively* in bringing those intuitions under rules of the unity of consciousness. If I applied that concept to the Supreme Being, I would be saying that the raw materials of the Supreme Being's thought come from the realm of appearance; but it was the inadequacy of appearances to meet the demands of reason that forced me to beyond them to the concept of a being that doesn't depend on appearances and is not identified or characterized through them. To credit the Supreme Being with understanding, therefore, I need a concept of understanding from which the notion of getting-data-from-the-senses has been purged. But if I separate *understanding* from *sensibility* to obtain a pure understanding that the Supreme Being might have, then nothing remains but *the mere form of thinking without intuitions*; and form alone doesn't enable me to know anything definite, and so it doesn't enable me to point my thought at the Supreme Being as an object. On the one hand, then, I mustn't suppose that the Supreme Being  $\checkmark$ thinks about sensible intuitions; on the other, I mustn't suppose that the Supreme Being  $\checkmark$ thinks without having intuitions to think about. So: for my purpose of attributing understanding to the Supreme Being I would have to conceive another kind of understanding, such as would *actively* intuit its objects *itself*, instead of passively having intuitions of them brought to it by sensibility. But I haven't the least notion of such an understanding, because human understanding is conceptual, its only way of knowing is through general concepts, and it has no ability to present itself with intuitive data.

I shall run into exactly the same trouble if I attribute a *will* to the Supreme Being; for I have this concept only by drawing it from my internal experience; I experience will in myself as based on facts of the form *I shall not be satisfied unless I get object x*, which means that my will is grounded in sensibility, through which desired objects are presented to me; and that dependence on sensibility is absolutely incompatible with the pure concept of the Supreme Being.

Hume's objections to deism are weak, and affect only the arguments and not the thesis of deism itself. But as regards *theism*, which is supposed to come from adding certain *content* to deism's merely transcendent and thus empty concept of the Supreme Being, his objections are very strong; indeed they are irrefutable as arguments against certain forms of theism, including all the usual ones. Hume always insists that by the mere concept of *an original being*, to which we apply only ontological predicates ('eternal,

‘omnipresent’, ‘omnipotent’), we don’t think anything definite, and that other properties must be added if we are to have a concept of a definite, concrete thing. This is not a trivial requirement, Hume holds. For example, he says that it is not enough to say *It is a cause*; but we must explain what kind of causality it has - for example, whether it is exercised through understanding and will - and *that* is the point at which his attack begins on his real topic, theism; up to there he had been attacking only the arguments for deism, which is not a notably dangerous thing to do. All his dangerous arguments refer to anthropomorphism [from Greek meaning ‘man-shaped-ism’; in theology anthropomorphism is the view that God is like man]. Hume holds this to be inseparable from theism, and to make it internally self-contradictory; and if anthropomorphism were left out of the theological story, theism would drop out with it, and nothing would remain but deism. We can’t make anything out of deism: it is worthless, and can’t serve as a foundation for religion or morals. If this anthropomorphism were really unavoidable, no proofs whatever of the existence of a Supreme Being, even were they all granted, could give us a detailed concept of this Being without involving us in contradictions.

When we connect the command *to avoid all transcendent judgments of pure reason* with the apparently conflicting command *to proceed to concepts that lie beyond the domain of immanent (empirical) use*, we become aware that the two commands can subsist together, but only right on the *boundary* of all permitted use of reason - for this boundary belongs equally to the domain of experience and to that of the creations of thought [= Ideas]. And through that awareness we also learn how these Ideas, remarkable as they are, serve merely for marking the boundaries of human reason. On the one hand they give warning not to go on extending our empirical knowledge with no thought of boundaries, as though nothing but sheer *world* remained for us to know, and yet on the other hand not to overstep the bounds of experience and want to make judgments about things beyond them, as things in themselves.

But we stop *at* this boundary if we limit our judgment merely to how the world may relate to a Being whose very concept lies beyond the reach of any knowledge we are capable of within the world. For we don’t then attribute to the Supreme Being *in itself* any of the properties through which we represent objects of experience, and so we avoid *dogmatic* anthropomorphism; but we attribute those properties to the Supreme Being’s *relation to the world*, thus allowing ourselves a *symbolic* anthropomorphism, which in fact concerns only language and not the object itself.

When I say that we are compelled to view the world *as if* it were the work of a supreme understanding and will, I actually say nothing more than that a watch, a ship, a regiment, are related to the watchmaker, the shipbuilder, the commanding officer in the same way that the sensible world (or everything that underlies this complex of appearances) is related to the Unknown; and in saying this I don’t claim to know the Unknown as it is *in itself*, but only as it is *for me* or *in relation to the world of which I am a part*.

## Section 58

Such knowledge is knowledge *by analogy*. This does not involve (as the word ‘analogy’ is commonly thought to do) an imperfect similarity of two things, but a perfect similarity of

relations between the members of two quite dissimilar pairs of things.<sup>16</sup> By means of this analogy we are left with a concept of the Supreme Being that is detailed enough *for us*, though we have omitted from it everything that could characterize it *absolutely* or *in itself*; for we characterize only its relation to the world and thus to ourselves, and that is all we need. Hume's attacks on those who want to determine this concept absolutely, taking the materials for doing so from themselves and the world, don't affect my position; he can't object against me that if we give up the objective anthropomorphism of the concept of the Supreme Being we have nothing left.

Hume in the person of Philo in his dialogues grants to Cleanthes as a necessary hypothesis the *deistic* concept of the original being, in which this being is thought through nothing but the ontological predicates of 'substance', of 'cause', etc. Two comments on this:

*We must think the original being in this way*; because there is no other way to think it, and if we don't have *any* thought of the original being, reason can't have any satisfaction in the world of the senses, where it is driven by mere conditions that are in their turn conditioned, thus driving us back along a never-starting sequence of causes. If the use of reason in relation to all possible experience is to be pushed to the highest point while remaining in complete harmony with itself, the only possible way to do this is to assume a highest reason as a cause of all the connections in the world. Such a principle must be thoroughly advantageous to reason, and can't hurt it anywhere in its natural use.

*We can properly think the original being in this way*, because those predicates - 'substance', 'cause' etc. - are mere categories, which yield a concept of the original being that isn't determinate and for just that reason isn't limited to any conditions of sensibility. In thinking of the original being in this way we don't fall into anthropomorphism, which transfers predicates from the world of the senses to a being quite distinct from that world. We are not transferring reason as a property *to the original being in itself*, but only *to its relation* to the world of the senses; and so anthropomorphism is entirely avoided. For all we are considering here is the *cause* of something that is perceived everywhere in the world, namely the world's rational form; and insofar as the Supreme Being contains the ground of this rational form of the world, reason is to be attributed to it. But in saying that

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<sup>16</sup> Thus, there is an analogy between the legal relation of human acts and the mechanical relation of motive powers. I can never do something to someone else without giving him a right to do the same to me in the same circumstances; just as no body can act on another through its motive power without thereby causing the other to react equally against it. *Right* and *motive power* are quite dissimilar things, yet in their relation there is complete similarity. By means of such an analogy I can give a relational concept of things that are absolutely unknown to me. For example, as

a = the promotion of the happiness of children

is related to

b = parental love,

so

c = the happiness of the human species

is related to

x = the unknown in God, which we call love.

Not because (x) God's love has the least similarity to (b) any human inclination; but because we can suppose its relation to the world to be similar to that which things in the world have to one another. But the relational concept in this case is a mere category, namely the concept of cause, having nothing to do with sensibility.

the Supreme Being has reason, we are speaking analogically, expressing only the *relation* that the unknown supreme cause has to the world, and we do this so as to see everything in the world as being in the highest degree *reasonable*. This procedure doesn't involve us in treating reason as an attribute through which we can conceive *God*; what we do, rather, is to conceive *the world* in the way that is needed if we are to tackle it with the greatest possible principled use of reason. In this way we admit that the Supreme Being in itself is quite inscrutable and is not even *conceivable* in any determinate way, and that keeps us from two errors that we might otherwise make. Roughly and briefly, they are the errors of trying to explain God in terms of the world, and trying to explain the world in terms of God. A little more fully, one of the errors is that of

making a transcendent use of the concept we have of reason as an efficient cause (by means of the will), trying to determine the nature of God in terms of properties that are only borrowings from human nature - thereby losing ourselves in gross and extravagant notions;

and the other error consists in

allowing our contemplation of the world to be flooded with supernatural patterns of explanation, led by the transfer to God of our notions of human reason - thereby deflecting this contemplation from its proper role, which is to study mere nature through human reason, not rashly to derive nature's appearances from a supreme reason.

The best way to put it, given our weak concepts, is this: we should conceive the world AS IF its existence and its inner nature came from a supreme reason.

In thinking of it in this way, we achieve two things. We recognize what the world itself is like, without wanting to determine what its cause is like in itself. And we see the ground of what the world is like (the ground of the world's rational form) in the *relation* of the supreme cause to the world, not finding the world sufficient by itself for that purpose.<sup>17</sup>

Returning now to what Philo granted to Cleanthes:- We are perfectly free to predicate of this original being a *causality through reason* in respect of the world, thus moving on to theism; and this doesn't oblige us to attribute this kind of causally powerful reason to the original being itself, as a property attached to it.

Thus the difficulties that seem to stand in the way of theism disappear. We achieve this by joining to Hume's principle:

Do not push the use of reason dogmatically beyond the field of all possible experience

this other principle, which he quite overlooked:

Do not consider the domain of experience as something which in the eyes of our reason sets its own boundaries.

The critique of reason here indicates the true middle way between the dogmatism against which Hume fought and the scepticism that he wanted to introduce to oppose it. It is not

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<sup>17</sup> I shall say: the causality of the highest cause relates to the world in the same way that human reason relates to its artifacts. That leaves the nature of the supreme cause itself still unknown to me: I only compare its effect (the order of the world) which I know, and the conformity of this to reason, with the effects of human reason, which I also know; and hence I term the supreme cause 'reason', without thereby attributing to it what I understand by 'reason' as applied to man, or assigning to it any property of anything else that I know.

the usual kind of ‘middle way’, which one is advised to pick out for oneself as it were mechanically (a little of the one, a little of the other), making nobody any the wiser. Rather, it is a middle way that can be delineated exactly, according to principles.

## Section 59

At the beginning of this note [section 57] I used the metaphor of a *boundary* in order to fix the limits on the proper use of reason. The world of the senses contains mere appearances, which are not things in themselves; but the understanding must assume things in themselves (noumena), because it recognizes the objects of experience as appearances and understands that they must be appearances of something. Our reason covers both appearances and things in themselves, and the question arises: How does reason go about setting boundaries to the understanding with respect to both these domains? Experience, which contains all that belongs to the world of the senses, doesn’t set bounds for itself; it proceeds in every case from some conditioned item to some other item that is its condition, and is also a conditioned object; and nothing in this procedure requires it ever to come to a halt. The boundary of experience must lie wholly outside it, and that is the domain of pure beings of the understanding. But when it comes to *finding out* what these beings are like, this domain is for us an empty space; and when we are dealing with concepts whose instances we can identify and study, we can’t pass out of the field of possible experience. But a boundary is itself something positive, which belongs as much to what lies inside it as to the space lying outside the given totality; so reason partakes in real positive knowledge when it stretches out to this boundary. Reason doesn’t try to go beyond the boundary, because out there it is confronted by an empty space in which it can conceive forms of things but can’t conceive things themselves. Still, even when it adopts this stance towards the boundary, just in *setting* the boundary reason has *knowledge*. In this knowledge it is not confined within the world of the senses, but nor does it stray outside; rather, as befits the knowledge of a boundary, it focuses on the *relation between* what lies outside the boundary and what is contained inside it.

Natural theology is such a concept at the boundary of human reason, because at that boundary reason finds itself compelled to look out further towards the Idea of a Supreme Being (and, for moral purposes towards the Idea of a world that can be thought but not experienced). It doesn’t do this so as to find out anything about this mere creation of the understanding lying *outside* the world of the senses; its purpose is rather to employ principles of the greatest possible (theoretical as well as practical) unity to guide its conduct *within* the world of the senses - a purpose that is served by relating these principles to an independent reason, as the cause of all the connections found in the world of the senses. The aim is not merely to *invent* a being of reason. Invention is not in question here, because beyond the world of the senses there must *be* something that can be thought only by the pure understanding. Reason’s aim is to *characterize* this being, though of course only by analogy.

And so we are left with our original proposition, which is the upshot of the whole critique:

Reason, through all its *a priori* principles, never teaches us about anything other than objects of possible experience, and about these it teaches nothing more than can be known in experience.

But this limitation on what reason can do doesn't prevent it from leading us to the objective *boundary* of experience, that is, to the *relation* to something that is the ultimate ground of all objects of experience without itself being one of them. Still, reason doesn't teach us anything about what this 'something' is like *in itself* - only about how it *relates* to reason's own complete and utterly high-minded use in the domain of possible experience. But this is all the usefulness that we can reasonably want reason to have, and we have cause to be satisfied with it.

## Section 60

So I have fully exhibited metaphysics as something we can *do*, showing it as an automatic upshot of *the natural tendency of human reason*, and showing what our essential goal is when we do metaphysics. But we have found that things can go wrong in this pursuit: this *wholly natural* use of such a tendency of our reason, if it is not reined in and given limits (which can come only from a scientific critique), entangles us in transcendent *dialectical* inferences leading to conclusions of which some are illusory and others are even in conflict with one another; and this fallacious metaphysics is not a help but an obstacle to the advancement of our knowledge of nature. So it is worth our while to investigate the *natural goals* towards which we can steer this liking that our reason has for transcendent concepts, and this will counteract the mishaps mentioned above, because everything that is natural must be originally aimed at some useful purpose.

Such an enquiry is risky, and I admit that what I can say about it is only conjecture, like every speculation about nature's original purposes. But this is permissible, just this once, because I am enquiring not into the objective validity of metaphysical judgments but into your natural tendency to make such judgments, so that the enquiry belongs not to the system of metaphysics but rather to the study of mankind.

The transcendental Ideas, taken all together, form the real problem of natural pure reason, a problem that compels reason to quit the mere observation of nature, to go beyond all possible experience, and in so doing to bring into existence this thing (whether it is knowledge or sophistry!) called metaphysics. When I consider all of these Ideas, I think I see that

the aim of this natural tendency - this metaphysics - is to free our thinking from the fetters of experience and from the limits of the mere observation of nature, taking this freedom at least far enough to open up to us a field containing only objects for the pure understanding, which no sensibility can reach.

This is not so that we can speculatively occupy ourselves with this field (for we can find no ground to stand on while we do that), but so that we can think of moral principles as at least *possible*. The connection between their being possible and the field opened up by metaphysics is as follows. Reason absolutely requires that moral principles be universal; and they can't achieve universality unless they can fix their expectations and hopes on the field of transcendental Ideas because in the domain of experience strict universality is never to be found.

Now I find that the *psychological* Idea, little as it shows me of the nature of the human soul (thought of as something) elevated above all concepts of experience, does plainly enough show the inadequacy of these concepts, and in that way steers me away from a **materialist** theory of mind - a theory that is unfit to explain anything in nature, as

well as cramping the use of reason in moral thinking. The *cosmological* Ideas serve similarly to keep us from **naturalism**, which asserts that nature is sufficient unto itself; they do this through bringing home to us the obvious fact that even if we had all possible knowledge of nature, reason's legitimate demands would not be satisfied. Finally there is the *theological* Idea, whose service to us is as follows. All natural necessity in the sensible world is conditioned, because it always involves something's being necessitated by something else that is also conditioned; and thus *unconditional* necessity is to be looked for only in a cause that is different from the world of the senses. And the causality of this cause can't be yet another example of natural necessity, for if it were it could never make comprehensible the existence of the contingent (as its consequent). So the theological Idea, which is the Idea of a non-natural cause of everything contingent, is something that reason uses to free itself from **fatalism** (in both its versions: (1) blind natural necessity in the system of nature itself, without a first principle, and (2) blind causality of a first principle of nature), and to arrive at the concept of a cause possessing freedom, or of a highest intelligence. Thus the transcendental Ideas serve, if not to instruct us positively, at least to put a stop to the impudent assertions of *materialism*, of *naturalism*, and of *fatalism* - assertions that restrict the field of reason - thereby making room for the moral Ideas to operate outside the field of speculation. This, I should think, goes some way towards explaining reason's natural tendency to engage with Ideas, which I mentioned earlier.

The facts about the *practical* or moral usefulness that a purely *speculative* science can have don't lie within the province of the science itself; so they can be seen simply as a scholium [= 'explanatory note, marginal comment'] which, like all scholia, is not a part of the science itself. Still, this material surely lies within the boundaries of philosophy, especially of philosophy drawn from the well of pure reason - a part of philosophy in which reason's *speculative* use in metaphysics must necessarily be all of a piece with its *practical* use in morals. Hence the unavoidable dialectic of pure reason, considered as something occurring in metaphysics as a natural tendency, deserves to be explained not only as an illusion that needs to be cleared away but also, if possible, as an upshot of *something put in place by nature* for a purpose - though this task lies outside the job-description of metaphysics proper, and so cannot rightly be assigned to it.

The solutions of the questions put forward in the *Critique* at A642-68 = B675-96 should be regarded as a second scholium - this time one that is more closely related to the content of metaphysics.<sup>18</sup> For in that part of the *Critique* certain principles of reason are put forward that characterize *a priori* the order of nature or rather the understanding that is to seek nature's laws through experience. They seem to have propositional content and not merely to be rules for how the understanding should be employed, and to be law-giving with regard to experience, although they spring from mere reason, which cannot

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<sup>18</sup> Throughout the *Critique* I remained resolved not to neglect anything, however deeply hidden, that could bring completion to the inquiry into the nature of pure reason. Afterwards it is up to each person to decide how far to take his researches, once he has been shown what remains to be done. This attitude to further research can reasonably be expected from someone who has made it his business to survey the whole field, so as to leave it to others for future cultivation and for whatever subdividing of it they think fit. The scholia belong to this part of the total project; because of their dryness they can hardly be recommended to amateurs, and hence they are presented only for experts.

like the understanding be considered as a principle of possible experience. This agreement between principles issued by reason and what is found in experience may rest on this:

Nature isn't attached to appearances (or to the sensibility through which appearances come) in themselves, but is to be found only in the relation of sensibility to the understanding. And just as nature takes us upwards from sensibility to understanding, so the theoretical use of the understanding takes us further upwards to reason. A thoroughgoing unity in the use of the understanding for the sake of a systematically unified possible experience can be had only if the understanding is related to reason. And so, putting the two together, experience is indirectly subject to the legislation of reason.

The question of whether this *is* where the agreement comes from may be pondered by those who want to trace the nature of reason even beyond its use in metaphysics, into the general principles for making general natural history systematic. In the *Critique* I represented this task as important, but I didn't try there to carry it out.

And thus I conclude the analytic solution of my own chief question: *How is metaphysics in general possible?* by starting with the actual doing of metaphysics (or at least with the consequences of that) and climbing from there to the grounds of its possibility. [See the explanation of 'analytic' on page 7.]

### **SOLUTION OF THE GENERAL QUESTION OF THE PRELIMINARIES: How is metaphysics possible as a science?**

Metaphysics as a natural tendency of reason is real, but by itself it is dialectical and deceitful (as the analytic solution of the third principal question showed). If we set ourselves to take principles from it, and in using them to follow the natural (but nonetheless *false*) illusion, we can never produce science, but only a pointless dialectical art in which one school may outdo another but none can ever get, and be entitled to, lasting approval.

For metaphysics as a science to be entitled to claim not mere fallacious plausibility but insight and conviction, a critique of reason itself must exhibit

the whole stock of *a priori* concepts,

the classification of them according to their different sources (sensibility, understanding, and reason),

a complete list of these concepts, and

the analysis of each of them together with all the consequences of that analysis;

but above all the critique must show

the possibility of synthetic *a priori* knowledge (doing this through a deduction of these concepts),

the principles governing the use of the *a priori* concepts, and finally

the boundaries of that use;

and all of this is to be presented in a complete system! Thus criticism, and that alone, contains in itself the whole well-tested and verified plan for achieving metaphysics as a science - the plan and indeed all the means for carrying it out. By any other ways or means the task is impossible. [Here and below, 'criticism' translates *Kritik*, which is usually rendered as 'critique'.] So the question here is not so much how the task is possible as

How to get it under way, inducing good minds to quit their mistaken and fruitless cultivation in favour of one that won't deceive, and how such an alliance for the common end may best be directed.

This much is certain, that someone who has sampled criticism will for ever after be disgusted with all the dogmatic twaddle that he used to endure - he *had* to endure it because his reason was in need of something and could find nothing better than the twaddle for its nourishment.

Criticism relates to ordinary academic metaphysics exactly as chemistry does to alchemy, or as astronomy does to the astrology of the fortune-teller. I guarantee that when you have thought through and grasped the principles of criticism, even if only in these preliminaries, you will never return to that old and sophisticated pseudo-science of dogmatic academic metaphysics; rather, you will look forward with a certain delight to a metaphysics that is now surely in your power, that requires no more preparatory discoveries, and, above all, that can provide reason with permanent satisfaction. For here is an excellence that metaphysics can confidently count on and that no other possible science can: *it can be completed and put into a permanent state where there are no more changes to be made, and no additions through new discoveries*. That is because in metaphysics reason has the sources of its knowledge in itself, not in objects and the intuition of them (reason has *nothing* to learn from intuition); and when it has presented the fundamental laws of its own capacities completely, and so definitely as to prevent any misunderstanding, there is nothing left for pure reason to know *a priori* - indeed, there is not even any basis left for it to ask any further questions. There is something especially attractive about the sure prospect of knowledge that is so definite and so completed - even apart from all its advantages (of which more later).

All false art, all empty 'wisdom', lasts its time out but eventually destroys itself, and its cultural high-point comes at the moment of the onrush of its decay. That this time has come for metaphysics is shown by the condition into which it has fallen in all the learned nations, in contrast with all the zeal with which other sciences of every kind are pursued. The old organization of university studies still preserves its shadow; and now and then a solitary academy of science, by offering prizes, tempts someone or other to have a shot at it; but it is no longer counted among the solid sciences. You can judge for yourself how a gifted man would take it if he were called 'a great metaphysician'! It might be meant as a compliment, but hardly anyone would want to be so labelled.

Yet, though the time of the collapse of all dogmatic metaphysics has undoubtedly arrived, we are still far from being able to say that the time has come for its rebirth through a solid and complete critique of reason. When someone's inclinations shift from running one way to running in the opposite direction, he passes through an intermediate stage of indifference in which he is not inclined in any direction. And this fact about human desires and tendencies has its analogue in shifts of intellectual direction among the sciences. This moment of 'indifference', with an old science on the wane and no new one to take its place, is the most dangerous for an author, but in my opinion it's the most favourable for the science. For when the total dissolution of former ties has extinguished the partisan spirit, minds are in the best state to take in, gradually, proposals for a new scheme of alliances.

If I say:

I hope that these preliminaries may excite investigation in the field of criticism, and provide something new and promising to nourish the universal spirit of philosophy that seems -except for moral philosophy- to be under-nourished,

I can already imagine that everyone who is tired and cross from walking the thorny paths of my critique will ask me: What is your basis for hoping *that*? I answer: *The basis of the irresistible law of necessity.*

Will the human mind ever give up metaphysical researches altogether? There is no more chance of that than there is of our choosing to give up breathing altogether so as to avoid inhaling impure air! So there will always be metaphysics in the world; what's more every person - especially every thinking person - will have metaphysical views, and in the absence of a public standard he will tailor them to suit himself. What has been called 'metaphysics' up to now can't satisfy any demanding mind, but it's quite impossible to give up metaphysics completely; so a critique of pure reason itself must now be *attempted*; or if one exists it must be *investigated* and comprehensively tested. There is no other way to meet this pressing need, which is something more than mere thirst for knowledge.

Ever since I have come to know criticism, when I finish reading a book with metaphysical content - one that has entertained and enriched me by its precision of thought, variety, orderliness, and easy style - I can't help asking: *Has this author really advanced metaphysics a single step?* I hope they will forgive me - those learned men whose writings have been useful to me in other respects and have always helped me to develop my mental powers - for saying that I have never been able to find that the science of metaphysics has been advanced in the least by their works or by my lesser ones (even when my egotism speaks in their favour!).

The reason for this is very obvious: it is that metaphysics did not then exist as a science; and those other writers and I couldn't make small steps towards bringing it into existence, because it can't be assembled bit by bit, but must have its seed fully preformed in the critique. However, in order to prevent any misunderstanding we should bear in mind something I have already said: the understanding gains a great deal from the analytic treatment of our concepts, but the science (of metaphysics) is not in the least advanced by it, because these analyses of concepts are merely materials out of which the science is to be assembled in the first place. Let the concepts of substance and of accident be ever so well analysed and fixed; that is an excellent preparation for some future use. But if I cannot prove that *in everything that exists the substance endures and only the properties change*, our science is not the least advanced by all this analysis. Metaphysics has so far not been able to prove *a priori* either  $\forall$ the above proposition, or  $\forall$ the principle of sufficient reason, still less  $\forall$ any compound principle such as belongs to psychology or cosmology, or indeed  $\forall$ any synthetic proposition whatsoever. So all this analysis has achieved nothing, created and advanced nothing; and despite all this bustle and clatter the science is right back where it was in Aristotle's time; though the preparations for it would have been better advanced -now- than they were -back then-, if only the guiding thread to synthetic knowledge had been found.

If anyone thinks himself wronged in this, he can easily refute my charge by producing a single synthetic proposition belonging to metaphysics that he offers to prove *a priori* in the dogmatic manner. Until he has done this I shan't grant that he has really advanced the science; even if the proposition -that he claims to be able to prove- is sufficiently confirmed

by common experience. No demand can be more moderate or fairer than this, and if it is not fulfilled (as it quite certainly won't be), no verdict is more just than this: *Up to now, metaphysics has never existed as a science.*

In case my challenge is accepted, I must rule out just two things: playing around with probability and conjecture, which are as little suited to metaphysics as they are to geometry; and decision by means of the divining rod of so-called *sound common sense*, which does not dip in the same place for everyone and is guided by the personal qualities of the person holding it.

For as regards the former, nothing can be more absurd than to think of grounding our judgments on probability and conjecture in metaphysics, which is a philosophy based on pure reason. Everything that is to be known *a priori* is for that very reason announced as absolutely certain, and must therefore be proved as such. We might as well think of basing geometry or arithmetic on conjectures! The calculus of probability, which is part of arithmetic, contains no merely probable judgments. Rather, it consists of completely certain judgments about the degree of possibility of certain upshots in given homogeneous conditions. What happens across the totality of all possible cases *must* be in accordance with such rules or judgments, though these are not determinate enough to say what will happen in any particular case. Only in empirical natural science can conjectures be tolerated (they come in there through induction and analogy), and even there at least the *possibility* of what one is assuming must be quite certain.

The appeal to common sense is even more absurd, if that's possible, when we are dealing with concepts and principles not considered as valid with regard to experience but considered as valid even beyond the conditions of experience. For what *is* common sense? It is *ordinary understanding* insofar as it judges correctly. But what is ordinary understanding? It is the capacity for knowledge and for using rules in application to particular cases, as distinguished from speculative understanding, which is the capacity for knowledge of rules in the abstract. So common sense can hardly understand the rule that *every event is determined by its cause*, and can never take it in as a general proposition. It therefore demands an example from experience; and when it is given one, and hears that this rule means nothing but what it (common sense) always thought when a window-pane was broken or an article of furniture went missing, *then* it understands the principle and agrees to it. Ordinary understanding is thus of use only to the extent that it can see its rules confirmed by experience (though actually the rules are in it *a priori*); consequently the job of having insight into these rules *a priori* and independently of experience is assigned to speculative understanding, and lies quite outside the field of vision of common sense. But metaphysics has to do only with speculative understanding; and someone who appeals to common sense for support in metaphysics shows that he doesn't have much of it! For in this context common sense has no judgment at all; and when it is invoked, there is a kind of bad faith in that, because it is looked down on with contempt except when people are in difficulties and don't know where else to turn for advice or help.

These false friends of common sense (who occasionally prize it highly, but usually despise it) customarily offer this excuse for sometimes appealing to it:

There must in the end be some propositions that are immediately certain, and for which there is no need to give any proof, or even any account at all; because if

there were not, there would be no end to the grounds for our judgments. And these immediately certain propositions are the ones we know to be true through our common sense.

But these people can never prove their right to say this by pointing to anything indubitable that they can immediately ascribe to common sense - with two exceptions that are irrelevant to our present concerns. One is the principle of contradiction, which we can set aside because it is inadequate for showing the truth of synthetic judgments. The other is comprised of mathematical propositions, such as that twice two make four, and that between two points there is only one straight line, etc. But these judgments are vastly different from those of metaphysics. For in mathematics when I conceptually represent something to myself as possible I can also make it, construct it, in my thought: to one *two* I add the other *two*, one by one, and so myself make the number *four*; or from one point to another I draw in thought all kinds of lines, and can draw only one in which every part is like every other part which means that the line is straight. But no such construction has a place in metaphysics, as I shall explain through the example of the concept of causation: with all my power of thinking I cannot extract from the concept of one thing the concept of *something else* whose existence is necessarily connected with the first thing; rather, if I want a basis for connecting something with something else I must call in experience. Now, my understanding provides me *a priori* (yet always only in reference to possible experience) with the concept of such a connection between different things, namely *causation*. But I cannot exhibit this concept *a priori* in intuition, thus showing its possibility *a priori*, as I can the concepts of mathematics. In metaphysics the concept of causation (together with the principles of its application) has to be valid *a priori*, and for that there must be a justification and deduction of its possibility - for otherwise we can't know what its range of validity is, -e.g.- whether it can be used only in experience or also outside it. Such a justification and deduction are nothing remotely like the intuitive construction through which we can show possibility in mathematics.

In metaphysics as a speculative science of pure reason, therefore, we can never appeal to common sense. We *can* make such an appeal when

we are forced to abandon *pure reason* and to renounce all purely speculative knowledge (which must always be *knowledge* strictly so-called), which involves renouncing metaphysics itself and its teaching on certain matters, this 'forcing' coming about because

we find that all we can achieve is *reasonable belief* - which suffices for our needs and may indeed be more wholesome for us than knowledge strictly so-called.

When we make that switch, the shape of the situation is completely altered. Metaphysics must be science, over-all and in each part; otherwise it is nothing. That is because metaphysics, as speculation of pure reason, has nothing to hold it steady except *universal* insights. Beyond its domain, however, probability and common sense can be used legitimately and to good effect, but following principles of their own, the importance of which always depends on their reference to practical life.

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

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## APPENDIX

### On what can be done to make metaphysics actual as a science

As none of the paths that have so far been followed have reached the goal of metaphysics as a science, and since it never will be reached except through a preceding critique of pure reason, it seems reasonable to ask that this present attempt at such a critique be examined carefully and accurately - unless you think it better to give up all pretensions to metaphysics, which is all right as long as you stick to it.

If we take the course of things as it is, not as it ought to be, there are two sorts of judgments: (1) *a judgment that precedes the investigation*, (2) *a judgment that comes after the investigation*. In our case (1) is what happens when the reader pronounces judgment on the *Critique of Pure Reason* on the basis of his own metaphysics, though the possibility of *that* is what the *Critique* aimed to investigate. In (2) in our case the reader is able to set aside for a while the consequences of the critical enquiries, which may clash violently with the metaphysics that he used to accept, and first examines the grounds from which those consequences can be derived. If what ordinary metaphysics offers were demonstrably certain (like the theorems of geometry, for instance), judgments of kind (1) would be legitimate; for if the consequences of certain principles conflict with established truths, the principles are false and can be rejected without further enquiry. But if metaphysics doesn't have a stock of indisputably certain (synthetic) propositions, and if it is even the case that a number of the propositions of metaphysics - though as plausible as the best of them - have consequences that conflict with one another, and if metaphysics contains absolutely no criterion for the truth of specifically metaphysical (synthetic) propositions, then the (1) kind of judging is not admissible, and the (2) method should be followed, that is the investigation of the principles of the *Critique* must precede all judgments as to its worth or unworth. In the remainder of this Appendix I shall present an actual example of (1), followed by a proposal for an example of (2).

### On a sample of a judgment of the *Critique* prior to its examination

This judgment is to be found in the *Göttingen Scholarly News*, the supplement to the third part, from 19 January 1782, pages 40 and following. [The review, published anonymously, was written by Christian Garve.]

When an author who is thoroughly familiar with the subject-matter of his work and has worked hard to present his own thoughts in it falls into the hands of a reviewer who for his part is sharp enough to see the points on which depend the value (if any) of the book, who does not hang on the *words* but goes for the *content*, and confines himself to sifting and testing the principles from which the author started, the author may be displeased by the severity of his judgment but the public doesn't mind it because here the public is the winner. And the author himself can be glad that an early opportunity to correct or explain his work has come through the examination of a competent judge. If he thinks he is fundamentally right, he can in this way remove in good time any stumbling-block that might eventually hurt the success of his work.

I find myself in a completely different situation with my reviewer. He seems to have missed entirely the real point of the enquiry with which I have (for better or worse) been occupied. Perhaps he was impatient with thinking through a lengthy work; or angry at the threatened reform of a science in which he thought he had settled everything long ago; or - what I reluctantly believe is the case - real narrowness of grasp prevented him from ever carrying his thoughts beyond his school metaphysics. Anyway, whatever the reason, he impetuously whips through a long series of propositions of which one can make nothing without knowing their premises, and scatters around his condemnations, the reasons for which the reader understands no better than he does the propositions being condemned. So his review is no use to the reader, and doesn't do the slightest harm to me in the judgment of experts. So I would have passed over this review completely if it hadn't given me an opportunity to provide some clarifications that may save some readers of these *Preliminaries* from misinterpretations.

Wanting to position himself so as to set the whole work in a light that is most unflattering to its author, doing this easily without putting any work into it, Reviewer begins and ends by saying: 'This work is a system of transcendental (or, as he translates it, of higher) idealism.'<sup>19</sup>

A glance at this line showed me what sort of review was in store for me. It was like someone who has never seen or heard of geometry, finds a copy of Euclid and on flipping through its pages sees various figures, is asked his opinion of it, and replies: 'The work is a text-book of drawing; the author uses a special language in which to give dark, incomprehensible directions that in the upshot teach nothing more than what everyone can accomplish with a good natural eye, etc.'

Meanwhile, let us see what sort of idealism it is that runs through my whole work, although it is far from constituting the soul of the system.

The thesis of all genuine idealists from the Eleatic school to Bishop Berkeley is contained in this formula:

All knowledge through the senses and experience is nothing but sheer illusion, and only in the ideas of the understanding and reason is there truth.

The principle that governs and determines *my* idealism throughout is on the contrary:

All knowledge of things through unaided pure understanding or pure reason is nothing but sheer illusion, and only in experience is there truth.

This is precisely the opposite of the former, genuine idealism. So how did I come to use this expression for a completely opposite purpose, and how did my reviewer come to see genuine idealism everywhere?

The solution of this difficulty rests on something that could have been very easily understood - by anyone who wanted to! - from the over-all structure of the work. Space

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<sup>19</sup> 'Higher' - no way! High towers, and metaphysically-great men that resemble them, are not for me - there is usually too much wind around them! My place is the fertile bottom-land of experience; and the word 'transcendental' - whose meaning was so often explained by me but not once grasped by my reviewer (so carelessly has he looked at everything) - doesn't signify something that goes beyond all experience, but something that does indeed precede experience *a priori*, but whose role is simply to make knowledge through experience possible. If these concepts step beyond experience, their employment is termed *transcendent*, as distinct from their *immanent* use, that is, their use limited to experience. Don't confuse 'transcendent' with 'transcendental'. All misunderstandings of this kind have been adequately guarded against in the work itself, but it suited the reviewer's turn to misunderstand me.

and time, together with everything they contain, are not things or qualities in themselves, but belong merely to the appearances of such things and qualities; up to this point I am doctrinally at one with the ·genuine· idealists. But they, and especially Berkeley, regarded space ·itself· as a mere empirical representation, and held that it together with all its properties is known to us only by means of experience or perception - just like the appearances *in* space. As against this, I show in the first place, that

space (and also time, which Berkeley ignored) and all its properties can be known by us *a priori*, because space (as well as time)  $\Psi$ is present in us before all perception or experience as a *pure form of our sensibility* and  $\Psi$ makes possible all sensible intuition and thus all appearances.

It follows from this ·contrast between Berkeley and me· that  $\Psi$ because truth rests on universal and necessary laws as its criteria, experience **for Berkeley** can have no criteria of truth, because its appearances (according to him) have nothing underlying them *a priori*, from which it follows in turn that they are nothing but sheer illusion; whereas **for me** space and time (in combination with the pure concepts of the understanding) prescribe their law *a priori* to all possible experience, and this at the same time yields the sure criterion for distinguishing truth from illusion in experience.<sup>20</sup>

My so-called idealism (properly: *critical idealism*) is thus of a quite special kind, in that

it overthrows ordinary idealism; and through it all *a priori* knowledge, even that of geometry, first receives objective reality; and even the most zealous ·ordinary· realists could not have claimed *that*, because they lacked my demonstrated ideality of space and time - ·that is, my proof that space and time are forms of our sensibility·.

In these circumstances I would have liked, so as avoid all misunderstanding, to name this concept of mine differently; but I can't very well alter the name totally. So I may be permitted in future to call it 'formal idealism' (·as I did late in section 49·) or, better, 'critical idealism', to distinguish it from the dogmatic idealism of Berkeley and the sceptical idealism of Descartes.

I find nothing else worthy of comment in this review of my book. All the way through the reviewer presents blanket judgments - a smart procedure for a reviewer to use, because it doesn't reveal the state of his knowledge or ignorance; ·whereas· a single criticism that was thorough and detailed, if it concerned the main issue (as it ought to), might have exposed error in my work, and might also have revealed the reviewer's level of skill in this sort of enquiry. Another well-conceived device for removing early on the readers' desire to read the book itself - readers who usually form their conceptions of books merely from newspaper articles - is  $\Psi$ to pour out all in one breath a number of

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<sup>20</sup> Genuine idealism always has a visionary purpose; it is bound to. But my idealism is designed solely for grasping the possibility of our *a priori* knowledge of objects of experience - a problem that has never been solved before, and never even been posed. In this way all visionary idealism collapses. As was already to be seen in Plato, visionary idealism inferred from our ·having· *a priori* knowledge (even that of geometry) ·that there is· another intuition different from that of the senses, namely an intellectual intuition. It never occurred to any of them that the senses themselves might intuit *a priori* ·as I say they do, for example in geometry·.

propositions, torn out of the context of their grounds of proof and explanations, which are bound to strike the reader as nonsensical (especially considering that they are poles apart from all ordinary school-metaphysics), to make the reader disgusted with the demands on his patience ad nauseam, and then, after presenting and attributing to me the brilliant proposition that *constant illusion is truth* (which was news to me!), to conclude with the firm, fatherly rebuke: ‘What is the point, then, of this quarrel with accepted language, what is the point - and what is the source - of the idealistic distinction?’ After a first judgment that all that is special in my book is metaphysically heretical, now at the end it is said to be a mere change of language; which clearly proves that my would-be judge hasn’t the slightest grasp of it, and hasn’t even understood himself.<sup>21</sup>

Reviewer speaks like a man who must be aware of having important and excellent insights - but ones that he keeps hidden, for I don’t know of anything recent relating to metaphysics that would justify his tone. It is wrong for him to withhold his discoveries from the world, for there are doubtless many others like me who have not been able to find, in all the fine things that have been written in this branch of philosophy, anything that has advanced the science of metaphysics by so much as a finger-breadth. What we do find is definitions sharpened, lame proofs fitted out with new crutches, the crazy-quilt of metaphysics supplied with new patches or with a change of pattern; but none of this is what the world requires! The world has had enough of metaphysical assertions; what is wanted is to establish the possibility of this science, the sources from which certainty could be derived in it, and sure criteria by which to distinguish the dialectical illusion of pure reason from truth. The reviewer must have the key to all this; otherwise he would never have spoken in such a high tone.

But joking aside I am inclined to suspect that no such requirement for the science of metaphysics has ever entered his head. If it had,

he would have focussed on this matter in his review, and if he thought I had been wrong about it even a failed attempt in such an important affair would have won his respect. If that is how things stand, we are good friends again. He can think his way as deeply as he likes into his metaphysics; no-one will stop him; but he can’t make judgments about the source of metaphysics in reason, for that lies outside metaphysics.

That’s if the requirements for a science of metaphysics *had* entered his head. But my suspicion that they *didn’t* is not unfounded, as is shown by the fact that he doesn’t say a word about the possibility of synthetic knowledge *a priori*, though this was the real problem on the solution of which the fate of metaphysics wholly rests, and to which my *Critique* (along with the present *Preliminaries*) was entirely directed. The idealism that he stumbled on in the *Critique*, and was pinned down by, was incorporated in the system only because it was the sole means for solving the above problem (though it was later confirmed on other grounds); so if he had understood what was going on he would have to have shown either that the problem is not as important as I make it out to be in the *Critique* (and again now in these *Preliminaries*), or that my *appearance* concept doesn’t solve it all or provides a solution that is inferior to some other. But I don’t find a word of

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<sup>21</sup> [Kant has a footnote here, protesting at two of the reviewer’s misunderstandings.]

this in the review. So the reviewer understood *nothing* of what I wrote, and perhaps also nothing of the spirit and nature of metaphysics itself; unless (and I would rather think this) a reviewer's haste, and annoyance at the difficulty of working through so many obstacles, threw an unfavourable shadow over the work lying before him, hiding from him its fundamental features.

In the field of metaphysics as elsewhere, there is a good deal to be done before a learned journal - however carefully recruited and well-chosen its contributors are - can maintain its otherwise well-deserved reputation. Other sciences and branches of knowledge have their standards. Mathematics has its standard within itself; history and theology have it in secular or sacred books; natural science and medicine have it in mathematics and experience; jurisprudence has it in law books; and even matters of taste have standards in the examples of the ancients. But for judging the thing called metaphysics the standard has yet to be found (I have made an attempt to settle what it is and how it should be used). Until it is worked out, what is to be done when works of this kind have to be judged? If the works are of the dogmatic kind, do what you like with them; when someone plays the master over others in this game, it won't be long before he runs into someone else who pays him back in kind. But if the writings are of the critical sort - offering a critique not of other writings but of reason itself - then the standard of judgment can't be taken for granted but must first be sought for. When such writings are in question, it may still be all right to offer objections and blame; but underlying them should be an attitude of co-operation, because the need for standards, and for metaphysics to become a science is common to us all, and the lack of the needed insight makes it inappropriate for anyone to come across as a judge handing down verdicts.

But so as to connect this defence of my work with the interests of the philosophizing public, I propose a *test* that will settle the question of how metaphysical enquiries should be directed towards their common end. It is just what mathematicians have done to show by competition which methods are best:

I challenge my reviewer critic to prove *in his way* any one really metaphysical principle that he accepts. Being metaphysical it must be synthetic and known *a priori* from concepts. It could be one of the most indispensable principles, as for instance the principle of the persistence of substance, or of the necessary determination of events in the world by their causes; but it must (this is a fair demand) be proved on *a priori* grounds.

If he can't do this (and silence is confession), he must admit that

as metaphysics is nothing at all without the absolute certainty of propositions of this kind, and as he can't prove any of them in his dogmatic manner, the first thing that is needed - before anything else is done - is to establish the possibility or impossibility of metaphysics, in a critique of pure reason.

So he is obliged either to admit that my principles of criticism are correct, or to prove that they are not. I can already foresee that, although he has been carefree in his reliance on the certainty of his principles, when it comes to a strict test he won't find a single one in the whole range of metaphysics that he can boldly bring forward. So I shall grant him the most favourable terms that can ever be expected in such a competition, namely: I shall take the onus of proof from him and lay it on myself.

He finds in these *Preliminaries* [section 51] and in my *Critique* (B 454-89, the Antinomies chapter) eight propositions, in pairs whose members contradict each other, but each of which necessarily belongs to metaphysics, which must either accept or disprove it (although each has in its day been accepted by some philosopher). Now the reviewer is at liberty to select  $\forall$ any one he likes out of these eight propositions, and to accept it without any proof (that's a gift from me), but  $\forall$ only one (for waste of time won't do either of us any good); and then to attack my proof of the contrary proposition. If I can rescue the latter, thereby showing that the opposite of the proposition he chose can be just as clearly proved in accordance with principles that every dogmatic metaphysics must necessarily recognize, then this will settle that metaphysics has a hereditary fault that can't be *explained* - let alone *removed* - until we ascend to the birth-place of metaphysics, pure reason itself. So my critique - which makes that ascent - must either be accepted or replaced by a better one; it must at least be *studied*, which is all I am demanding now. If on the other hand I can't save my proof, then  $\forall$ a synthetic proposition *a priori* from dogmatic principles is firmly entrenched on my opponent's side,  $\forall$ my impeachment of ordinary metaphysics is revealed as unfair, and  $\forall$ I pledge myself to recognize his censure of my critique as justified (though none of this *will* happen!). But for this it would be necessary, it seems to me, that he should *drop his anonymity*. Otherwise I don't see how I could avoid, instead of having just one problem to deal with, being honoured or assailed by many problems from anonymous and indeed uninvited opponents.

#### **Proposal for an investigation of the *Critique*, on which a judgment can follow**

I am obliged to the learned public for the silence with which it has for a long time honoured my *Critique*; for this shows  $\forall$ a postponement of judgment, and thus  $\forall$ some supposition that a work that leaves all the beaten paths and strikes out on a new and initially difficult one may contain something through which an important but currently withered branch of human knowledge might derive new life and fruitfulness; and thus it also shows  $\forall$ a concern not to break off and destroy the still delicate graft through a hasty judgment. A specimen of a judgment that was delayed for the above reasons is now before my eyes in the *Gotha Scholarly News*. Setting aside my own (suspect) praise for this review, any reader can see for himself that it is a solid piece of work; this can be seen from its graspable and accurate presentation of a portion of the basic principles of my work.

Because an extensive structure can't be judged as a whole from a hurried glance, I propose that it [the system of *Critique of Pure Reason*] be tested piece by piece from its foundations, and that the present *Preliminaries* be used as a general outline with which the work itself could then sometimes be compared. If this suggestion were based only on the imagined importance that vanity usually attributes to one's own output, it would be immodest and would deserve to be indignantly rejected. But that is not how things stand; something very serious is at stake; the affairs of speculative philosophy are now on the brink of total extinction, although human reason hangs onto them with undying affection, an affection that is now trying (and failing) to change into indifference because it has been constantly disappointed.

In our thinking age one might expect that many deserving men would use any good opportunity to work together for the common interest of an ever more enlightened reason,

if only there were some hope that in this way they would reach their goal. Mathematics, natural science, law, arts, even morals etc., do not completely fill the soul; there is always a space staked out for pure, speculative reason. The emptiness of this space prompts us to resort to grotesque masks and worthless glitter, or to mysticism, ostensibly in search of employment and entertainment though really we are just distracting ourselves so as to drown out the burdensome voice of reason, which, true to its own nature, demands something that can satisfy *it*, and not merely something that started up so as to serve other ends or to satisfy our inclinations. So a study that is concentrated on *this territory of reason existing for itself* must (or so I have reason to hope) have a great attraction for anyone who has tried in this way to stretch his thought, because it is just precisely *there* that all other kinds of knowledge - all other goals, even - must come together and unite into a whole. I would venture to say that the attraction is greater than any other theoretical knowledge has; one would not lightly trade in this one for any of them - e.g. forgoing metaphysics in order to take up chemistry.

However, for this investigation I am not offering the work itself, but rather these *Preliminaries* as plan and guide. Although

I am even now well satisfied with the *Critique* as far as concerns its content, order, and manner of presentation, and with how carefully I weighed and tested every sentence before writing it down (for it has taken me years to be completely satisfied not only over-all but also in detail, sometimes labouring to become satisfied with the sources of one particular proposition),

I am nevertheless not completely satisfied with my exposition in some chapters of the *Doctrine of Elements* - for example on the *Deduction of the Concepts of the Understanding*, or on the *Paralogisms of Pure Reason* - because a certain long-windedness takes away from their clarity; and your examination of the work as a whole could be based on what these *Preliminaries* say about those chapters rather than on the chapters themselves.

The Germans are praised for taking things further than people of other nations in matters where steady and continuous work is needed. If this opinion is well founded, then an opportunity to confirm it presents itself here: a project in which all thinking men have an equal interest, and whose successful outcome is hardly in doubt, though it has never succeeded before. The prospects for completing the project are good especially because the science in question is of such a peculiar sort that it can be brought to completion all at once, reaching a *permanent state* in which it can never be taken the least bit further, amplified by later discoveries, or even altered in any way (apart from improvements in clarity in some places, or improvements in how the science is used for all sorts of purposes). This advantage of being made finally complete in a single operation is one that no other science can have, because none of the others concerns a cognitive faculty that is as completely isolated and as independent of other faculties as is the faculty of pure reason. The present moment seems not to be unfavourable to my expectations, because just now in Germany no-one seems to know how to occupy himself outside the so-called useful sciences, doing something that is not mere play, but a project in which success will be permanent.

I must leave to others to work out how the efforts of scholars might be united in the pursuit of this goal. I'm not looking for a mere acceptance of my theses by anyone; I'm

not even flattering myself with the *hope* of that. But as long as the matter is investigated from the ground up, perhaps with my system's being subjected to attacks, repetitions, qualifications, or confirmation, completion, and extension, the outcome is certain to be a system - maybe not mine - which can become a possession for which future generations will have reason to be grateful.

It would take too long for me to show here what kind of metaphysics may be expected to ensue if we first get right about the principles of criticism, and to show how the resultant metaphysics would appear richly and respectably outfitted, *not* cutting a poor, paltry, plucked figure just because its old false feathers had been pulled out! But other great benefits that such a reform would bring with it are immediately obvious. The ordinary metaphysics had good uses, in that it sought out the elementary concepts of pure understanding in order to clarify them through analysis and make them definite through explanation. In this way it was a training for reason, in whatever direction it might go. But that's all the good the ordinary metaphysics did; and really it did *less* than that. For it negated this service that it had performed for reason by encouraging conceit through reckless assertions, sophistry through subtle escapes and excuses, and shallowness through the ease with which it settled the most difficult problems by means of a little school-philosophy. This school-philosophy is all the more seductive the more it has the option of taking something from the language of science (on the one hand) and something from ordinary speech and thought (on the other), thus being all things to all men - but in reality nothing at all! In contrast, criticism gives to our judgment a standard by which knowledge can with certainty be distinguished from pseudo-knowledge; and, by being brought into full operation in metaphysics, criticism lays the basis for a way of thinking that goes on to extend its healthy influence over every other use of reason, for the first time inspiring the true philosophical spirit. But the service that criticism does for theology also, by making it independent of the judgment of dogmatic speculation and thus securing it completely against the attacks of all dogmatic opponents, is certainly not to be valued lightly. For ordinary metaphysics, although it promised to give great help to theology, couldn't keep this promise; indeed it was worse than useless to theology. By calling speculative dogmatics to its assistance, which it did under the influence of common metaphysics, theology succeeded only in arming enemies *against* itself. Mysticism, which can prosper in a rationalistic age only when it hides behind a system of school-metaphysics, under the protection of which it may venture to *rave rationally*, so to speak, will be driven by critical philosophy from this, its last hiding-place. And concerning all of this nothing else can be as important for a teacher of metaphysics as to be able to say - once and for all, with universal agreement - that what he is expounding is at last *science*, and that it will bring real benefit to the public.