

PREFACE

These *Prolegomena* are not for the use of pupils but of future teachers, and even the latter should not expect that they will be serviceable for the systematic exposition of a ready-made science, but merely for the discovery of the science itself. 255

There are scholars for whom the history of philosophy (both ancient and modern) is philosophy itself; for these the present *Prolegomena* are not written. They must wait till those who endeavor to draw from the fountain of reason itself have completed their work; it will then be the turn of such scholars to inform the world of what has been done. Unfortunately, nothing can be said which, in their opinion, has not been said before, and truly the same prophecy applies to all future time; for since the human reason has for many centuries speculated upon innumerable objects in various ways, it is hardly to be expected that we should not be able to discover analogies for every new idea among the old sayings of past ages.

My object is to persuade all those who think metaphysics worth studying that it is absolutely necessary to pause a moment and, disregarding all that has been done, to propose first the preliminary question, "Whether such a thing as metaphysics be at all possible?"

If it is a science, how does it happen that it cannot, like other sciences, obtain universal and permanent recognition? If not, how can it maintain its pretensions and keep the human understanding in suspense with hopes never ceasing, yet never fulfilled? Whether then we demonstrate our knowledge or our ignorance in this field, we must come once for all to a definite conclusion respecting the nature of this so-called science, which cannot possibly remain on its present footing. It seems almost ridiculous, while every other science is continually advancing, 256

that in this, which pretends to be wisdom incarnate, for whose oracle every one inquires, we should constantly move round the same spot, without gaining a single step. And so its supporters having melted away, we do not find that men who are confident of their ability to shine in other sciences venture their reputation here, where everybody, however ignorant in other matters, presumes to deliver a final verdict, inasmuch as in this domain there is as yet no standard weight and measure to distinguish soundness from shallow talk.

After all, it is nothing extraordinary in the elaboration of a science, when men begin to wonder how far it has advanced, that the question should at last occur as to whether and how in general such a science is possible? Human reason so delights in constructions that it has several times built up a tower and then razed it to examine the nature of the foundation. It is never too late to become reasonable and wise; but if the insight comes late, there is always more difficulty in starting the change.

The question whether a science be possible presupposes a doubt as to its actuality. But such a doubt offends the man whose entire goods may perhaps consist in this supposed jewel; hence he who raises the doubt must expect opposition from all sides. Some, in the proud consciousness of their possessions, which are ancient and therefore considered legitimate, will take their metaphysical compendia in their hands and look down on him with contempt; others who never see anything except it be identical with what they have somewhere else seen before will not understand him, and everything will remain for a time as if nothing had happened to excite the concern or the hope for an impending change.

257 Nevertheless, I venture to predict that the independent reader of these *Prolegomena* will not only doubt his previous science, but ultimately be fully persuaded that it cannot exist unless the demands here stated on which its possibility depends be satisfied; and, as this has never been done, that there is, as yet, no such thing as metaphysics. But as it can never cease to be in demand,¹ —since the interests of human reason in general are

1. Says Horace:

Rusticus expectat, dum defluat amnis, at ille Labitur et labetur

intimately interwoven with it—he must confess that a radical reform, or rather a rebirth of the science according to a new plan, is unavoidable, however much men may struggle against it for a while.

Since the *Essays* of Locke and Leibnitz, or rather since the origin of metaphysics so far as we know its history, nothing has ever happened which could have been more decisive to its fate than the attack made upon it by David Hume. He threw no light on this kind of knowledge; but he certainly struck a spark from which light might have been obtained, had it caught some inflammable substance and had its smouldering fire been carefully nursed and developed.

Hume started mainly from a single but important concept in metaphysics, namely, that of the connection of cause and effect (including its derivative concepts of force and action, etc.). He challenged reason, which pretends to have given birth to this concept of herself, to answer him by what right she thinks anything could be so constituted that if that thing be posited, something else also must necessarily be posited; for this is the meaning of the concept of cause. He demonstrated irrefutably that it was entirely impossible for reason to think *a priori* and by means of concepts such a combination as involves necessity. We cannot at all see why, in consequence of the existence of one thing, another must necessarily exist, or how the concept of such a combination can arise *a priori*. Hence he inferred that reason was altogether deluded with reference to this concept, which she erroneously considered as one of her children, whereas in reality it was nothing but a bastard of imagination, impregnated by ex-
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perience, which subsumed certain representations under the law of association, and mistook a subjective necessity (custom) for an objective necessity arising from insight. Hence he inferred that reason had no power to think such connections, even in general, because her concepts would then be purely fictitious and all her pretended *a priori* cognitions nothing but common experiences marked with a false stamp. This is as much as to say

in omne volubilis aevum. [“A peasant waits for the river to flow away, but it flows on and will so flow forever.”] *Epistle* I, 2, 42f.

that there is not, and cannot be, any such thing as metaphysics at all.²

However hasty and mistaken Hume's conclusion may appear, it was at least founded upon investigation, and this investigation deserved the concentrated attention of the brighter spirits of his day as well as determined efforts on their part to discover, if possible, a happier solution of the problem in the sense proposed by him, all of which would have speedily resulted in a complete reform of the science.

But Hume suffered the usual misfortune of metaphysicians, of not being understood. It is positively painful to see how utterly his opponents, Reid, Oswald, Beattie, and lastly Priestley, missed the point of the problem; for while they were ever taking for granted that which he doubted, and demonstrating with zeal and often with impudence that which he never thought of doubting, they so misconstrued his valuable suggestion that everything remained in its old condition, as if nothing had happened. The question was not whether the concept of cause was right, useful, and even indispensable for our knowledge of nature, for this Hume had never doubted; but whether that concept could be thought by reason *a priori*, and consequently whether it possessed an inner truth, independent of all experience, implying a more widely extended usefulness, not limited merely to objects of experience. This was Hume's problem. It was a question concerning the *origin* of the concept, not concerning its indispensability in use. Were the former decided, the conditions of its use and the sphere of its valid application would have been determined as a matter of course.

But to satisfy the conditions of the problem, the opponents of the great thinker should have penetrated very deeply into the

2. Nevertheless Hume called such destructive philosophy metaphysics and attached to it great value. "Metaphysics and morals," he says, "are the most important branches of science; mathematics and natural philosophy are not half so important." [*Essays Moral, Political, and Literary* (edited by Green and Grose) vol. I, p. 187. Essay XIV: Of the Rise and Progress of the Arts and Sciences] But the acute man merely regarded the negative use arising from the moderation of extravagant claims of speculative reason, and the complete settlement of the many endless and troublesome controversies that misled mankind. He overlooked the positive injury which results if reason be deprived of its most important prospects, which can alone supply to the will the highest aim for all its endeavors.

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nature of reason, so far as it is concerned with pure thought—a task which did not suit them. They found a more convenient method of being defiant without any insight, viz., the appeal to *common sense*. It is indeed a great gift of heaven to possess right or (as they now call it) plain common sense. But this common sense must be shown in deeds by well-considered and reasonable thoughts and words, not by appealing to it as an oracle when no rational justification of oneself can be advanced. To appeal to common sense when insight and science fail, and no sooner—this is one of the subtle discoveries of modern times, by means of which the most superficial ranter can safely enter the lists with the most thorough thinker and hold his own. But as long as a particle of insight remains, no one would think of having recourse to this subterfuge. Seen in a clear light, it is but an appeal to the opinion of the multitude, of whose applause the philosopher is ashamed, while the popular charlatan glories and confides in it. I should think that Hume might fairly have laid as much claim to common sense as Beattie and, in addition, to a critical reason (such as the latter did not possess), which keeps common sense in check and prevents it from speculating, or, if speculations are under discussion, restrains the desire to decide because it cannot satisfy itself concerning its own principles. By this means alone can common sense remain sound. Chisels and hammers may suffice to work a piece of wood, but for etching we require an etcher's needle. Thus common sense and speculative understanding are both useful, but each in its own way: the former in judgments which apply immediately to experience; the latter when we judge universally from mere concepts, as in metaphysics, where sound common sense, so called in spite of the inappropriateness of the word, has no right to judge at all.

I openly confess that my remembering David Hume was the very thing which many years ago first interrupted my dogmatic slumber and gave my investigations in the field of speculative philosophy a quite new direction. I was far from following him in the conclusions to which he arrived by considering, not the whole of his problem, but a part, which by itself can give us no information. If we start from a well-founded, but undeveloped, thought which another has bequeathed to us, we may well hope by continued reflection to advance further than the acute man to whom we owe the first spark of light.

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So I tried first whether Hume's objection could not be put into a general form, and soon found that the concept of the connection of cause and effect was by no means the only concept by which the understanding thinks the connection of things *a priori*, but rather that metaphysics consists altogether of such concepts. I sought to ascertain their number; and when I had satisfactorily succeeded in this by starting from a single principle, I proceeded to the deduction of these concepts, which I was now certain were not derived from experience, as Hume had tried, but sprang from the pure understanding. This deduction (which seemed impossible to my acute predecessor and had never even occurred to any one else, though no one had hesitated to use the concepts without investigating the basis of their objective validity) was the most difficult task ever undertaken in the service of metaphysics; and the worst was that metaphysics, such as it then existed, could not assist me in the least because this deduction alone can render metaphysics possible. But as soon as I had succeeded in solving Hume's problem, not merely in a particular case, but with respect to the whole faculty of pure reason, I could proceed safely, though slowly, to determine the whole sphere of pure reason completely and from universal principles, in its boundaries as well as in its contents. This was required for metaphysics in order to construct its system according to a sure plan.

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But I fear that the working out of Hume's problem in its widest extent (namely, my *Critique of Pure Reason*) will fare as the problem itself fared when first proposed. It will be misjudged because it is misunderstood, and misunderstood because men choose to skim through the book and not to think through it—a disagreeable task, because the work is dry, obscure, opposed to all ordinary notions, and moreover long-winded. Now I confess that I did not expect to hear from philosophers complaints of want of popularity, entertainment, and facility when the existence of a highly prized and indispensable cognition is at stake, which cannot be established otherwise than by the strictest rules of scholarly precision. Popularity may follow, but is inadmissible at the beginning. Yet as regards a certain obscurity, arising partly from the diffuseness of the plan, owing to which the principal points of the investigation are easily lost sight of, the complaint is just, and I intend to remove it by the present *Prolegomena*.

The first-mentioned work, which discusses the pure faculty of

reason in its whole extent and bounds, will remain the foundation, to which the *Prolegomena*, as a preliminary exercise, refer; for that critique must exist as a science, systematic and complete as to its smallest parts, before we can think of letting metaphysics appear on the scene, or even have the most distant hope of so doing.

We have been long accustomed to seeing antiquated knowledge produced as new by taking it out of its former context, and fitting it into a systematic dress of any fancy pattern under new titles. Most readers will set out by expecting nothing else from the *Critique*; but these *Prolegomena* may persuade him that it is a perfectly new science, of which no one has ever even thought, the very idea of which was unknown, and for which nothing hitherto accomplished can be of the smallest use, except it be the suggestion of Hume's doubts. Yet even he did not suspect such a formal science, but ran his ship ashore, for safety's sake, landing on scepticism, there to let it lie and rot; whereas my object is rather to give it a pilot who, by means of safe navigational principles drawn from a knowledge of the globe and provided with a complete chart and compass, may steer the ship safely whither he listeth.

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If in a new science that is wholly isolated and unique in its kind we started with the prejudice that we can judge of things by means of would-be knowledge previously acquired, even though this is precisely what has first to be called in question; then we should only fancy we saw everywhere what we had already known, because the expressions have a similar sound. Yet everything would appear utterly metamorphosed, senseless, and unintelligible, because we should have as a foundation our own thoughts, made by long habit a second nature, instead of the author's. However, the longwindedness of the work, so far as it depends on the science itself and not on the exposition, its consequent unavoidable dryness, and its scholastic precision are qualities which can only benefit the science, though they may discredit the book.

Few writers are gifted with the subtlety and, at the same time, with the grace of David Hume, or with the depth, as well as the elegance, of Moses Mendelssohn. Yet I flatter myself that I might have made my own exposition popular, if my object had been merely to sketch out a plan and leave its completion to

others, instead of having my heart in the welfare of the science to which I had devoted myself so long; in truth, it required no little constancy, and even self-denial, to postpone the sweets of an immediate success to the prospect of a slower, but more lasting, reputation.

263 Making plans is often the occupation of an opulent and boastful mind, which thus obtains the reputation of a creative genius by demanding what it cannot itself supply, by censuring what it cannot improve, and by proposing what it knows not where to find. And yet something more should belong to a sound plan of a general critique of pure reason than mere conjectures, if this plan is to be other than the usual declamations of pious aspirations. But pure reason is a sphere so separate and self-contained that we cannot touch a part without affecting all the rest. We can therefore do nothing without first determining the position of each part and its relation to the rest. For inasmuch as our judgment cannot be corrected by anything outside of pure reason, so the validity and use of every part depends upon the relation in which it stands to all the rest within the domain of reason, just as in the structure of an organized body the end of each member can only be deduced from the full conception of the whole. It may, then, be said of such a critique that it is never trustworthy except it be perfectly complete, down to the smallest elements of pure reason. In the sphere of this faculty you can determine either everything or nothing.

But although a mere sketch preceding the *Critique of Pure Reason* would be unintelligible, unreliable, and useless, it is all the more useful as a sequel which enables us to grasp the whole, to examine in detail the chief points of importance in the science, and to improve in many respects our exposition, as compared with the first execution of the work.

That work being completed, I offer here such a plan which is sketched out after an analytical method, while the *Critique* itself had to be executed in the synthetical style, in order that the science may present all its articulations, as the structure of a peculiar cognitive faculty, in their natural combination. But should any reader find this plan, which I publish as the *Prolegomena to Any Future Metaphysics*, still obscure, let him consider that not every one is bound to study metaphysics, that

many minds will succeed very well in the exact and even in deep sciences more closely allied to intuition while they cannot succeed in investigations dealing exclusively with abstract concepts. In such cases men should apply their talents to other subjects. 264 But he who undertakes to judge or, still more, to construct a system of metaphysics must satisfy the demands here made, either by adopting my solution or by thoroughly refuting it and substituting another. To evade it is impossible. In conclusion, let it be remembered that this much-abused obscurity (frequently serving as a mere pretext under which people hide their own indolence or dullness) has its uses, since all who in other sciences observe a judicious silence speak authoritatively in metaphysics and make bold decisions, because their ignorance is not here contrasted with the knowledge of others. Yet it does contrast with sound critical principles, which we may therefore commend in the words of Virgil:

*Ignavum, fucos, pecus a praesepibus arcent.*³

3. ["They keep out of the hives the drones, an indolent bunch."] *Georgics*, IV, 168.

*Preamble on the Peculiarities of all
Metaphysical Cognition*

§1. OF THE SOURCES OF METAPHYSICS

If it becomes desirable to present any cognition as science, it will be necessary first to determine exactly its differentia, which no other science has in common with it and which constitutes its peculiarity; otherwise the boundaries of all sciences become confused, and none of them can be treated thoroughly according to its nature.

The peculiar features of a science may consist of a simple difference of object, or of the sources of cognition, or of the kind of cognition, or perhaps of all three conjointly. On these features, therefore, depends the idea of a possible science and its territory.

First, as concerns the sources of metaphysical cognition, its very concept implies that they cannot be empirical. Its principles (including not only its basic propositions but also its basic concepts) must never be derived from experience. It must not be physical but metaphysical knowledge, i.e., knowledge lying beyond experience. It can therefore have for its basis neither external experience, which is the source of physics proper, nor internal, which is the basis of empirical psychology. It is therefore *a priori* cognition, coming from pure understanding and pure reason. 266

But so far metaphysics would not be distinguishable from pure mathematics; it must therefore be called pure philosophical cognition; and for the meaning of this term I refer to the *Critique of Pure Reason* ("Methodology", Chap. I, Sec. 1), where the distinction between these two employments of reason is sufficiently explained. So much for the sources of metaphysical cognition.

§ 2. CONCERNING THE KIND OF COGNITION
WHICH CAN ALONE BE CALLED METAPHYSICAL

a. Of the Distinction between Analytic and Synthetic Judgments in General.—The peculiarity of its sources demands that metaphysical cognition must consist of nothing but *a priori* judgments. But whatever be their origin or their logical form, there is a distinction in judgments, as to their content, according to which they are either merely *explicative*, adding nothing to the content of the cognition, or *ampliative*, increasing the given cognition: the former may be called *analytic*, the latter *synthetic*, judgments.

Analytic judgments express nothing in the predicate but what has been already actually thought in the concept of the subject, though not so clearly and with the same consciousness. If I say: "All bodies are extended," I have not amplified in the least my concept of body, but have only analyzed it, as extension was really thought to belong to that concept before the judgment was made, though it was not expressed; this judgment is therefore analytic. On the other hand, this judgment, "All bodies have weight," contains in its predicate something not actually thought in the universal concept of body; it amplifies my knowledge by adding something to my concept, and must therefore be called synthetic.

b. The Common Principle of all Analytic Judgments is that of Contradiction.—All analytic judgments depend wholly on the principle of contradiction, and are in their nature *a priori* cognitions, whether the concepts that supply them with matter be empirical or not. For the predicate of an affirmative analytic judgment is already thought in the concept of the subject, of which it cannot be denied without contradiction. In the same way its opposite is necessarily denied of the subject in an analytic, but negative, judgment, by the same principle of contradiction. Such is the case of the judgments: "All bodies are extended," and "No bodies are unextended (i.e., simple)."

For this very reason all analytic judgments are *a priori* even when the concepts are empirical, as, for example, "Gold is a yellow metal"; for to know this I require no experience beyond my concept of gold, which contained the thought that this body is yellow and metal. It is, in fact, this thought that constituted my

concept; and I need only analyze it, without looking beyond it elsewhere.

c. Synthetic Judgments Require a Different Principle from that of Contradiction.—There are synthetic *a posteriori* judgments of empirical origin; but there are also others which are certain *a priori*, and which spring from pure understanding and reason. Yet they both agree in this, that they cannot possibly spring from the principle of analysis, namely, the principle of contradiction, alone, but require another quite different principle. But whatever principle they may be deduced from, they must be subject to the principle of contradiction, which must never be violated, even though everything cannot be deduced from it. I shall first classify synthetic judgments.

1. *Judgments of Experience* are always synthetic. For it would be absurd to base an analytic judgment on experience, as our concept suffices for the purpose without requiring any testimony from experience. That a body is extended is a judgment which holds *a priori*, and is not a judgment of experience. For before appealing to experience, we already have all the conditions for the judgment in the concept, from which we have then but to elicit the predicate according to the principle of contradiction, and thereby to become conscious of the necessity of the judgment, which experience could not at all teach us.

2. *Mathematical Judgments* are all synthetic. This fact seems hitherto to have altogether escaped the observation of those who have analyzed human reason; it even seems directly opposed to all their conjectures, though it is incontestably certain and most important in its consequences. For as it was found that the conclusions of mathematicians all proceed according to the principle of contradiction (as is demanded by all apodeictic certainty), men persuaded themselves that the fundamental propositions were known from the principle of contradiction. This was a great mistake, for a synthetic proposition can indeed be comprehended according to the principle of contradiction, but only by presupposing another synthetic proposition from which it follows, but never in and by itself.

First of all, we must observe that properly mathematical propositions are always judgments *a priori*, and not empirical, because they carry with them necessity, which cannot be obtained

from experience. But if this be not conceded to me, very well; I shall confine my assertion to *pure mathematics*, the very concept of which implies that it contains pure *a priori* and not empirical cognition.

269 It might at first be thought that the proposition $7 + 5 = 12$ is a mere analytic judgment, following from the concept of the sum of seven and five, according to the principle of contradiction. But on closer examination it appears that the concept of the sum of $7 + 5$ contains merely their union in a single number, without its being at all thought what the particular number is that unites them. The concept of twelve is by no means thought by merely thinking of the combination of seven and five; and, analyze this possible sum as we may, we shall not discover twelve in the concept. We must go beyond these concepts by calling to our aid some intuition corresponding to one of them, i.e., either our five fingers or five points (as Segner⁴ has it in his *Arithmetic*); and we must add successively the units of the five given in the intuition to the concept of seven. Hence our concept is really amplified by the proposition $7 + 5 = 12$, and we add to the first concept a second one not thought in it. Arithmetical judgments are therefore synthetic, and the more plainly according as we take larger numbers; for in such cases it is clear that, however closely we analyze our concepts without calling intuition to our aid, we can never find the sum by such mere analysis.

All principles of geometry are no less analytic. That a straight line is the shortest path between two points is a synthetic proposition. For my concept of straight contains nothing of quantity, but only a quality. The concept of the shortest is therefore altogether additional and cannot be obtained by any analysis of the concept of the straight line. Here, too, intuition must come to aid us. It alone makes the synthesis possible.

(Some other principles, assumed by geometers, are indeed actually analytic and depend on the principle of contradiction; but they only serve, as identical propositions, as a method of concatenation, and not as principles, e.g., $a = a$, the whole is equal to itself, or $a + b > a$, the whole is greater than its part. And yet even these, though they are recognized as valid from mere con-

4. [J. A. Segner: *Elementa Arithmeticae et Geometriae*, Göttingen, 1739.]

cepts, are only admitted in mathematics because they can be presented in some intuition.)

What actually makes us believe that the predicate of such apodeictic judgments is already contained in our concept, and that the judgment is therefore analytic, is the duplicity of the expression. We must think a certain predicate as joined to a given concept, and this necessity inheres in the concepts themselves. But the question is not what we must join in thought *to* the given concept, but what we actually think together with and in it, though obscurely; and so it is manifest that the predicate belongs to this concept necessarily indeed, yet not directly but indirectly by means of a necessarily present intuition.⁵

272 The essential and distinguishing feature of pure mathematical cognition among all other *a priori* cognitions is that it cannot at all proceed from concepts, but only by means of the construction of concepts (see *Critique of Pure Reason*, "Methodology", Chap. I, Sect. 1). As therefore in its judgments it must proceed beyond the concept to that which its corresponding intuition contains, these judgments neither can, nor ought to arise analytically, by dissecting the concept, but are all synthetic.

I cannot refrain from pointing out the disadvantage resulting to philosophy from the neglect of this easy and apparently insignificant observation. Hume, feeling the call (which is worthy of a philosopher) to cast his eye over the whole field of *a priori* cognitions in which human understanding claims such mighty possessions, heedlessly severed from it a whole, and indeed its most valuable, province, viz., pure mathematics. For he imagined that its nature, or, so to speak, the constitution of this province, depended on totally different principles, namely, on the principle of contradiction alone, and although he did not divide judgments in this manner formally and universally and did not use the same terminology as I have done here, what he said was equivalent to this: that pure mathematics contains only analytic, but metaphysics synthetic, *a priori* judgments. In this, however, he was greatly mistaken, and the mistake had a decidedly in-

5. [In the next several pages the order of the German text as it appears in the *Philosophische Bibliothek* Edition of Kant's *Works* is followed rather than the *Akademie* Edition.]

273 jurious effect upon his whole conception. But for this, he would have extended his question concerning the origin of our synthetic judgments far beyond the metaphysical concept of causality and included in it the possibility of mathematics *a priori* also; for this latter he must have assumed to be equally synthetic. And then he could not have based his metaphysical judgments on mere experience without subjecting the axioms of mathematics equally to experience, a thing which he was far too acute to do. The good company into which metaphysics would thus have been brought would have saved it from the danger of a contemptuous ill-treatment; for the thrust intended for it must have reached mathematics, which was not and could not have been Hume's intention. Thus that acute man would have been led into considerations which must needs be similar to those that now occupy us, but which would have gained inestimably from his inimitably elegant style.

[3.] *Metaphysical Judgments*, properly so-called, are all synthetic. We must distinguish judgments belonging to metaphysics from metaphysical judgments properly so-called. Many of the former are analytic, but they only afford the means to metaphysical judgments, which are the whole aim of the science and which are always synthetic. For if there be concepts belonging to metaphysics (as, for example, that of substance), the judgments springing from simple analysis of them also belong to metaphysics, as, for example, substance is that which only exists as subject, etc. By means of several such analytic judgments we seek to arrive at the definition of a concept. But as the analysis of a pure concept of the understanding (such as metaphysics contains) does not proceed in any different manner from the dissection of any other, even empirical, concepts, not belonging to metaphysics (such as, air is an elastic fluid, the elasticity of which is not destroyed by any known degree of cold), it follows that the concept indeed, but not the analytic judgment, is properly metaphysical. This science has something special and peculiar to itself in the production of its *a priori* cognitions, which must therefore be distinguished from the features it has in common with other rational knowledge. Thus the judgment that all the substance in things is permanent is a synthetic and properly metaphysical judgment.

If the *a priori* concepts which constitute the materials and

building blocks of metaphysics have first been collected according to fixed principles, then their analysis will be of great value. It might be taught as a particular part (as a *philosophia definitiva*), containing nothing but analytic judgments pertaining to metaphysics, and could be treated separately from the synthetic, which constitute metaphysics proper. For indeed these analyses are not elsewhere of much value except in metaphysics, i.e., as regards the synthetic judgments which are to be generated out of these previously analyzed concepts.

The conclusion drawn in this section then is that metaphysics is properly concerned with synthetic propositions *a priori*, and these alone constitute its end, for which it indeed requires various dissections of its concepts, viz., analytic judgments, but wherein the procedure is not different from that in every other kind of cognition, in which we merely seek to render our concepts distinct by analysis. But the generation of *a priori* cognition by intuition as well as by concepts, in fine, of synthetic propositions *a priori* in philosophical cognition, constitutes the essential content of metaphysics.

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

270 This division is indispensable as concerns the critique of human understanding and therefore deserves to be classical in it, though otherwise it is of little use. But this is the reason why dogmatic philosophers, who always seek the sources of metaphysical judgments in metaphysics itself and not outside of it in the pure laws of reason generally, altogether neglected this apparently obvious distinction. Thus the celebrated Wolff and his acute follower Baumgarten came to seek the proof of the principle of sufficient reason, which is clearly synthetic, in the principle of contradiction. In Locke's *Essay*, however, I find an indication of my division. For in the fourth book (chap. iii., § 9, seq.), having discussed the various connections of representations in judgments, and their sources, one of which he makes "identity or contradiction" (analytic judgments) and another the coexistence of representations in a subject (synthetic judgments), he confesses (§10) that our (*a priori*) knowledge of the latter is very narrow

and almost nothing. But in his remarks on this species of cognition, there is so little of what is definite and reduced to rules that we cannot wonder if no one, not even Hume, was led to make investigations concerning judgments of this kind. For such universal and yet determinate principles are not easily learned from other men who have only had them obscurely in their minds. One must hit on them first by one's own reflection; then one finds them elsewhere, where one could not possibly have found them at first because the authors themselves did not know that such an idea lay at the basis of their observations. Men who never think independently have nevertheless the acuteness to discover everything, after it has been once shown them, in what was said long since, though no one could ever see it there before.

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§ 4. THE GENERAL QUESTION OF THE PROLEGOMENA:
IS METAPHYSICS AT ALL POSSIBLE?

Were a metaphysics, which could maintain its place as a science, really in existence, could we say: here is metaphysics, learn it, and it will convince you irresistibly and irrevocably of its truth? This question would be useless, and there would only remain that other question (which would rather be a test of our acuteness than a proof of the existence of the thing itself): how is the science possible, and how does reason come to attain it? But human reason has not been so fortunate in this case. There is no single book to which you can point, as you do to Euclid, and say: this is metaphysics; here you may find the noblest aim of this science, namely, the knowledge of a highest being, and of a future existence, proved from principles of pure reason. We can be shown indeed many judgments, apodeictically certain, and never questioned; but these are all analytic, and rather concern the materials and the scaffolding for metaphysics than the extension of knowledge, which is our proper object in studying it (§ 2). Even supposing you point to synthetic judgments (such as the principles of sufficient reason, which you have never proved, as you ought to, from pure reason *a priori*, though we gladly concede its truth), you lapse, when you try to use them for your principal purpose, into such inadmissible and uncertain asser-

tions that in all ages one metaphysics has contradicted another, either in its assertions or their proofs, and thus has itself destroyed its own claim to lasting assent. Nay, the very attempts to set up such a science are the main cause of the early appearance of scepticism, a way of thinking in which reason treats itself with such violence that it could never have arisen save from complete despair of ever satisfying our most important aspirations. For long before men began to inquire into nature methodically, they consulted abstract reason, which had to some extent been exercised by means of ordinary experience; for reason is ever present, while laws of nature must usually be discovered with labor. So metaphysics floated to the surface, like foam, which dissolved the moment it was scooped off. But immediately there appeared a new supply on the surface, to be ever eagerly gathered up by some; while others, instead of seeking in the depths the cause of the phenomenon, thought they showed their wisdom by ridiculing the idle labor of their neighbors.

Weary therefore of dogmatism, which teaches us nothing, and of scepticism, which does not even promise us anything, not even to rest in permitted ignorance; disquieted by the importance of knowledge so much needed; and, lastly, rendered suspicious by long experience of all knowledge which we believe we possess or which offers itself under the title of pure reason—we have left but one critical question upon whose answer depends our future conduct, viz., *is metaphysics at all possible?* But this question must be answered not by sceptical objections to the asseverations of some actual system of metaphysics (for we do not as yet admit such a thing to exist), but from the conception, as yet only problematic, of a science of this sort.

In the *Critique of Pure Reason* I have treated this question synthetically, by making inquiries into pure reason itself and endeavoring in this source to determine the elements as well as the laws of its pure use according to principles. The task is difficult and requires a resolute reader to penetrate by degrees into a system based on no data except reason itself, and which therefore seeks, without resting upon any fact, to unfold knowledge from its original germs. These *Prolegomena*, however, are designed for preparatory exercises; they are intended to point out what must be done in order to make a science actual if it is possible, rather than to expound it. They must therefore rest upon

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something already known as trustworthy, from which we can set out with confidence and ascend to sources as yet unknown, the discovery of which will not only explain to us what we knew but exhibit a sphere of many cognitions which all spring from the same sources. The method of such *Prolegomena*, especially of those designed as a preparation for future metaphysics, is consequently analytical.

But it happens, fortunately, that though we cannot assume metaphysics to be an actual science, we can say with confidence that certain pure *a priori* synthetic cognitions are actual and given, namely, pure mathematics and pure physics; for both contain propositions which are everywhere recognized as apodeictically certain, partly by mere reason, partly by universal agreement from experience, and yet as independent of experience. We have therefore some, at least uncontested, synthetic knowledge *a priori*, and need not ask *whether* it be possible (for it is actual) but *how* it is possible, in order that we may deduce from the principle which makes the given knowledge possible the possibility of all the rest.

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

We have above learned the significant distinction* between analytic and synthetic judgments. The possibility of analytic propositions was easily comprehended, being entirely founded on the principle of contradiction. The possibility of synthetic *a posteriori* judgments, of those which are gathered from experience, also requires no special explanation; for experience is nothing but a continual joining together (synthesis) of perceptions. There remain therefore only synthetic propositions *a priori*, of which the possibility must be sought or investigated, because they must depend upon other principles than that of contradiction.

276 But here we need not first establish the possibility of such propositions so as to ask whether they are possible. For there are enough of them which indeed are of undoubted certainty, and as our present method is analytical, we shall start from the fact that such synthetic but purely rational cognition actually exists; but

we must now inquire into the ground of this possibility and ask *how* such cognition is possible, in order that we may, from the principles of its possibility, be enabled to determine the conditions of its use, its sphere, and its limits. The proper problem upon which all depends, when expressed with scholastic precision, is therefore:

How are synthetic propositions *a priori* possible?

For the sake of popularity I have above expressed this problem somewhat differently, as an inquiry into purely rational cognition, which I could do for once without detriment to the desired insight, because, as we have only to do here with metaphysics and its sources, the reader will, I hope, after the foregoing remarks, keep in mind that when we speak of purely rational cognition we do not mean analytic but synthetic cognition.⁶

Metaphysics stands or falls with the solution of this problem; its very existence depends upon it. Let anyone make metaphysical assertions with ever so much plausibility, let him overwhelm 277 us with conclusions; but if he has not first been able to answer this question satisfactorily, I have the right to say: this is all vain, baseless philosophy and false wisdom. You speak through pure reason and claim, as it were, to create cognitions *a priori* not only by dissecting given concepts, but also by asserting connections which do not rest upon the principle of contradiction, and which you believe you conceive quite independently of all experience; how do you arrive at this, and how will you justify such pretensions? An appeal to the consent of the common sense of mankind cannot be allowed, for that is a witness whose authority

6. It is unavoidable that as knowledge advances certain expressions which have become classical after having been used since the infancy of science will be found inadequate and unsuitable, and a newer and more appropriate application of the terms will give rise to confusion. [This is the case with the term "analytic."] The analytical method, insofar as it is opposed to the synthetical, is very different from an aggregate of analytic propositions. It signifies only that we start from what is sought, as if it were given, and ascend to the only conditions under which it is possible. In this method we often use nothing but synthetic propositions, as in mathematical analysis, and it were better to term it the regressive method, in contradistinction to the synthetical or progressive. A principal part of logic too is distinguished by the name of analytic, which here signifies the logic of truth in contrast to dialectic, without considering whether the cognitions belonging to it are analytic or synthetic.

depends merely upon rumor. Says Horace:

*Quodcunque ostendis mihi sic, incredulus odi.*⁷

The answer to this question is as indispensable as it is difficult; and though the principal reason that it was not attempted long ago is that the possibility of the question never occurred to anybody, there is yet another reason, viz., that a satisfactory answer to this one question requires a much more persistent, profound, and painstaking reflection than the most diffuse work on metaphysics, which on its first appearance promised immortality to its author. And every intelligent reader, when he carefully reflects what this problem requires, must at first be struck with its difficulty, and would regard it as insoluble and even impossible did there not actually exist pure synthetic cognitions *a priori*. This actually happened to David Hume, though he did not conceive the question in its entire universality as is done here and as must be done, if the answer is to be decisive for all metaphysics. For how is it possible, says that acute man, that when a concept is given me I can go beyond it and connect with it another which is not contained in it, in such a manner as if the latter *necessarily* belonged to the former? Nothing but experience can furnish us with such connections (thus he concluded from the difficulty which he took to be an impossibility), and all that vaunted necessity or, what is the same thing, all cognition assumed to be *a priori* is nothing but a long habit of accepting something as true, and hence of mistaking subjective necessity for objective.

278 Should my reader complain of the difficulty and the trouble which I occasion him in the solution of this problem, he is at liberty to solve it himself in an easier way. Perhaps he will then feel under obligation to the person who has undertaken for him a labor of so profound research and will rather be surprised at the facility with which, considering the nature of the subject, the solution has been attained. Yet it has cost years of work to solve the problem in its whole universality (using the term in the mathematical sense, viz., for that which is sufficient for all cases), and finally to exhibit it in the analytical form, as the reader will find it here.

7. ["Whatever is shown me thus, I do not believe and do hate."] *Epistle II*, 3, 188.

All metaphysicians are therefore solemnly and legally suspended from their occupations till they shall have satisfactorily answered the question: *How are synthetic cognitions a priori possible?* For the answer contains the only credentials which they must show when they have anything to offer us in the name of pure reason. But if they do not possess these credentials, they can expect nothing else of reasonable people, who have been deceived so often, than to be dismissed without further ado.

If they, on the other hand, desire to carry on their business, not as a science, but as an art of wholesome persuasion suitable for the common sense of man, they cannot in fairness be prevented from pursuing this trade. They will then speak the modest language of a rational belief; they will grant that they are not allowed even to conjecture, far less to know, anything which lies beyond the bounds of all possible experience, but only to assume (not for speculative use, which they must abandon, but for practical use only) the existence of something that is possible and even indispensable for the guidance of the understanding and of the will in life. In this manner alone can they be called useful and wise men, and the more so as they renounce the title of metaphysicians. For the latter profess to be speculative philosophers; and since, when judgments *a priori* are under discussion, poor probabilities cannot be admitted (for what is declared to be known *a priori* is thereby announced as necessary), such men cannot be permitted to play with conjectures, but their assertions must be either science or else nothing at all.

It may be said that the entire transcendental philosophy, which necessarily precedes all metaphysics, is nothing but the complete solution of the problem here propounded, in systematic order and completeness, and that we have hitherto never had any transcendental philosophy. For what goes by its name is properly a part of metaphysics, whereas the former science has first to settle the possibility of the latter and must therefore precede all metaphysics. And it is not surprising that when a whole science, deprived of all help from other sciences and consequently in itself quite new, is required to answer a single question satisfactorily, we should find the answer troublesome and difficult, nay, even shrouded in obscurity.

As we now proceed to this solution according to the analytical

method, in which we assume that such cognitions from pure reason actually exist, we can only appeal to two sciences of theoretical cognition (which alone is under consideration here), namely, pure mathematics and pure natural science. For these alone can exhibit to us objects in intuition and consequently (if there should occur in them a cognition *a priori*) can show the truth or conformity of the cognition to the object *in concreto*, that is, its actuality, from which we could proceed to the ground of its possibility by the analytical method. This facilitates our work greatly, for here universal considerations are not only applied to facts, but even start from them, while in a synthetic procedure they must strictly be derived *in abstracto* from concepts.

280 But in order to ascend from these actual and, at the same time, well-grounded pure cognitions *a priori* to a possible cognition of the kind that we are seeking, viz., to metaphysics as a science, we must comprehend that which occasions it, namely, the mere natural (though not above suspicion as to its truth) cognition *a priori* which lies at the foundation of that science, the elaboration of which without any critical investigation of its possibility is commonly called metaphysics. In a word, we must comprehend the natural conditions of such a science as a part of our inquiry, and thus the transcendental problem will be gradually answered by a division into four questions:

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

It may be seen that the solution of these problems, though chiefly designed to exhibit the essential content of the *Critique*, has yet something peculiar, which for itself alone deserves attention. This is the search for the sources of given sciences in reason itself, so that its faculty of knowing something *a priori* may by its own deeds be investigated and measured. By this procedure these sciences gain, if not with regard to their contents, yet as to their proper use; and while they throw light on the higher question concerning their common origin, they give, at the same time, an occasion for better explaining their own nature.

FIRST PART OF THE MAIN TRANSCENDENTAL QUESTION

How is Pure Mathematics Possible?

§ 6. Here is a great and established branch of knowledge, encompassing even now a wonderfully large domain and promising an unlimited extension in the future, and carrying with it thoroughly apodeictical certainty, i.e., absolute necessity, which therefore rests upon no empirical grounds. Consequently it is a pure product of reason, and moreover is thoroughly synthetic. [Here the question arises:] “How then is it possible for human reason to produce such cognition entirely *a priori*?” Does not this faculty [which produces mathematics], as it neither is nor can be based upon experience, presuppose some ground of cognition *a priori*, which lies deeply hidden but which might reveal itself by these its effects, if their first beginnings were but diligently ferreted out?

§ 7. But we find that all mathematical cognition has this peculiarity: it must first exhibit its concept in intuition, and do so *a priori*, in an intuition that is not empirical but pure. Without this mathematics cannot take a single step; hence its judgments are always *intuitive*; whereas philosophy must be satisfied with *discursive* judgments from mere concepts, and though it may illustrate its apodeictic doctrines through intuition, can never derive them from it. This observation on the nature of mathematics gives us a clue to the first and highest condition of its possibility, which is that some pure intuition must form its basis, in which all its concepts can be exhibited or constructed, *in concreto* and yet *a priori*.⁸ If we can discover this pure intuition and its possibility, we may thence easily explain how synthetic propositions *a priori* are possible in pure mathematics, and consequently

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8. [See *Critique of Pure Reason*, B 741.]

how this science itself is possible. For just as empirical intuition [viz., sense-perception] enables us without difficulty to enlarge the concept which we frame of an object of intuition by new predicates which intuition itself presents synthetically in experience, so pure intuition also does likewise, only with this difference: that in the latter case the synthetic judgment is *a priori* certain and apodeictic, in the former only *a posteriori* and empirically certain, because the *a posteriori* case contains only that which occurs in contingent empirical intuition, but the *a priori* case contains that which must necessarily be discovered in pure intuition. Here intuition, being an intuition *a priori*, is inseparably joined with the concept before all experience or particular perception.

282 § 8. But with this step our perplexity seems rather to increase than to lessen. For the question now is, "How is it possible to intuit anything *a priori*?" An intuition is such a representation as would immediately depend upon the presence of the object. Hence it seems impossible to intuit anything *a priori* originally, because intuition would in that event have to take place without either a former or a present object to refer to, and hence could not be intuition. Concepts indeed are such that we can easily form some of them *a priori*, viz., such as contain nothing but the thought of an object in general; and we need not find ourselves in an immediate relation to the object. Take, for instance, the concepts of quantity, of cause, etc. But even these require, in order to be meaningful and significant, certain concrete use—that is, an application to some intuition by which an object of them is given us. But how can the intuition of the object precede the object itself?

§ 9. If our intuition had to be of such a nature as to represent things as they are in themselves, there would not be any intuition *a priori*, but intuition would be always empirical. For I can only know what is contained in the object in itself if it is present and given to me. It is indeed even then inconceivable how the intuition of a present thing should make me know this thing as it is in itself, as its properties cannot migrate into my faculty of representation. But even if this possibility be granted, an intuition of that sort would not take place *a priori*, that is, before the object were presented to me; for without this latter fact no

ground of a relation between my representation and the object can be conceived, unless it rested on inspiration. Therefore in one way only can my intuition anticipate the actuality of the object, and be a cognition *a priori*, viz., if my intuition contains nothing but the form of sensibility, which in me as subject precedes all the actual impressions through which I am affected by objects. For that objects of sense can only be intuited according to this form of sensibility I can know *a priori*. Hence it follows that propositions which concern this form of sensuous intuition only are possible and valid for objects of the senses; as also, conversely, that intuitions which are possible *a priori* can never concern any other things than objects of our senses.

§ 10. Accordingly, it is only the form of sensuous intuition by which we can intuit things *a priori*, but by which we can know objects only as they appear to us (to our senses), not as they are in themselves; and this assumption is absolutely necessary if synthetic propositions *a priori* be granted as possible or if, in case they actually occur, their possibility is to be conceived and determined beforehand. 283

Now, the intuitions which pure mathematics lays at the foundation of all its cognitions and judgments which appear at once apodeictic and necessary are space and time. For mathematics must first present all its concepts in intuition, and pure mathematics in pure intuition, i.e., it must construct them. If it proceeded in any other way, it would be impossible to make a single step; for mathematics proceeds, not analytically by dissection of concepts, but synthetically, and if pure intuition be wanting there is nothing in which the matter for synthetic judgments *a priori* can be given. Geometry is based upon the pure intuition of space. Arithmetic attains its concepts of numbers by the successive addition of units in time, and pure mechanics especially can attain its concepts of motion only by employing the representation of time. Both representations, however, are merely intuitions; for if we omit from the empirical intuitions of bodies and their alterations (motion) everything empirical, i.e., belonging to sensation, space and time still remain, and are therefore pure intuitions that lie *a priori* at the basis of the empirical. Hence they can never be omitted; but at the same time, by their being pure intuitions *a priori*, they prove that they are mere

forms of our sensibility, which must precede all empirical intuition, i.e., perception of actual objects, and in conformity with which objects can be known *a priori* but only as they appear to us.

284 § 11. The problem of the present section is therefore solved. Pure mathematics, as synthetic cognition *a priori*, is possible only by referring to no other objects than those of the senses. At the basis of their empirical intuition lies a pure intuition (of space and time), which is *a priori*. This is possible because the latter intuition is nothing but the mere form of sensibility, which precedes the actual appearance of the objects, since in fact it makes them possible. Yet this faculty of intuiting *a priori* concerns not the matter of the appearance (that is, the sensation in it, for this constitutes what is empirical), but its form, viz., space and time. Should any man venture to doubt that both are not determinations of things in themselves but are merely determinations of their relation to sensibility, I should be glad to know how it can be possible to know *a priori* how their intuition will be characterized before we have any acquaintance with them and before they are presented to us. Such, however, is the case with space and time. But this is quite conceivable as soon as both count for nothing more than formal conditions of our sensibility, while the objects count merely as appearance; for then the form of the appearance, i.e., pure intuition, can by all means be represented as proceeding from ourselves, that is, *a priori*.

§ 12. In order to add something by way of illustration and confirmation, we need only watch the ordinary and unavoidably necessary procedure of geometers. All proofs of the complete congruence of two given figures (where the one can in every respect be substituted for the other) ultimately come down to the fact that they may be made to coincide. This is evidently nothing but a synthetic proposition resting upon immediate intuition; and this intuition must be pure and given *a priori*, else the proposition could not hold as apodeictically certain but would have empirical certainty only. In that case it could only be said that it is always found to be so and holds good only as far as our perception reaches. That complete space (which is not itself the boundary of another space) has three dimensions and that space in general cannot have more is based on the proposition that not more than three lines can intersect at right angles in one point.

This proposition cannot at all be shown from concepts, but rests 285 immediately on intuition, and indeed on pure intuition *a priori* because it is apodeictically certain. That we can require a line to be drawn to infinity (*in indefinitum*) or that a series of changes (for example, spaces traversed by motion) shall be infinitely continued presupposes a representation of space and time, which can only attach to intuition, namely, so far as it in itself is bounded by nothing, for from concepts it could never be inferred. Consequently, the basis of mathematics actually is pure intuitions, which make its synthetic and apodeictically valid propositions possible. Hence our transcendental deduction of the concepts of space and of time explains at the same time the possibility of pure mathematics. Without some such deduction its truth may be granted, but its existence could by no means be understood, and we must assume "that everything which can be given to our senses (to the external senses in space and to the internal sense in time) is intuited by us as it appears to us, not as it is in itself."

§ 13. Those who cannot yet rid themselves of the notion that space and time are actual qualities inherent in things in themselves may exercise their acumen on the following paradox. When they have in vain attempted its solution and are free from prejudices at least for a few moments, they will suspect that the reduction of space and time to mere forms of our sensuous intuition may perhaps be well founded.

If two things are quite equal in all respects as much as can be ascertained by all means possible, quantitatively and qualitatively, it must follow that the one can in all cases and under all circumstances replace the other, and this substitution would not occasion the least recognizable difference. This in fact is true of plane figures in geometry; but some spherical figures exhibit, notwithstanding a complete internal agreement, such a difference in their external relation that the one figure cannot possibly be put in the place of the other. For instance, two spherical triangles on opposite hemispheres which have an arc of the equator as their common base may be quite equal, both as regards sides and angles, so that nothing is to be found in either, if it be described for itself alone and completed, that would not equally be applicable to both; and yet the one cannot be put in

the place of the other (on the opposite hemisphere). Here, then, is an internal difference between the two triangles; this difference our understanding cannot show to be internal but only manifests itself by external relations in space. But I shall adduce examples, taken from common life, that are more obvious still.

What can be more similar in every respect and in every part more alike to my hand and to my ear than their images in a mirror? And yet I cannot put such a hand as is seen in the mirror in the place of its original; for if this is a right hand, that in the mirror is a left one, and the image or reflection of the right ear is a left one, which never can serve as a substitute for the other. There are in this case no internal differences which our understanding could determine by thinking alone. Yet the differences are internal as the senses teach, for, notwithstanding their complete equality and similarity, the left hand cannot be enclosed in the same bounds as the right one (they are not congruent); the glove of one hand cannot be used for the other. What is the solution? These objects are not representations of things as they are in themselves, and as some pure understanding would cognize them, but sensuous intuitions, that is, appearances, whose possibility rests upon the relation of certain things unknown in themselves to something else, viz., to our sensibility. Space is the form of the external intuition of this sensibility, and the internal determination of any space is possible only by the determination of its external relation to the whole of space, of which it is a part (in other words, by its relation to external sense). That is to say, the part is possible only through the whole, which is never the case with things in themselves as objects of the mere understanding, but can well be the case with mere appearances. Hence the difference between similar and equal things which are not congruent (for instance, helices winding in opposite ways) cannot be made intelligible by any concept, but only by the relation to the right and the left hands, which immediately refers to intuition.

REMARK I

have objective reality on condition that it refers merely to objects of sense. But in regard to the latter the principle holds good that our sense representation is not a representation of things in themselves, but of the way in which they appear to us. Hence it follows that the propositions of geometry are not determinations of a mere creation of our poetic imagination, which could therefore not be referred with assurance to actual objects; but rather that they are necessarily valid of space, and consequently of all that may be found in space, because space is nothing but the form of all external appearances, and it is this form alone in which objects of sense can be given to us. Sensibility, the form of which is the basis of geometry, is that upon which the possibility of external appearance depends. Therefore these appearances can never contain anything but what geometry prescribes to them. It would be quite otherwise if the senses were so constituted as to represent objects as they are in themselves. For then it would not by any means follow from the representation of space, which with all its properties serves the geometer as an *a priori* foundation, that this foundation together with what is inferred from it must be so in nature. The space of the geometer would be considered a mere fiction, and it would not be credited with objective validity because we cannot see how things must of necessity agree with an image of them which we make spontaneously and previous to our acquaintance with them. But if this image, or rather this formal intuition, is the essential property of our sensibility by means of which alone objects are given to us, and if this sensibility represents not things in themselves but their appearances, then we shall easily comprehend, and at the same time indisputably prove, that all external objects of our world of sense must necessarily coincide in the most rigorous way with the propositions of geometry. This is so because sensibility by means of its form of external intuition (space), with which the geometer is concerned, makes those objects possible as mere appearances. It will always remain a remarkable phenomenon in the history of philosophy that there was a time when even mathematicians who at the same time were philosophers began to doubt, not of the correctness of their geometrical propositions so far as they merely concerned space, but of their objective validity and the applicability to

nature of this concept itself and all its geometrical determinations. They showed much concern whether a line in nature might not consist of physical points, and consequently that true space in the object might consist of simple parts, while the space which the geometer has in his mind cannot be such. They did not recognize that this thought space renders possible the physical space, i.e., the extension of matter itself, and that this pure space is not at all a quality of things in themselves but a form of our sensuous faculty of representation, and that furthermore all objects in space are mere appearances, i.e., not things in themselves but representations of our sensuous intuition. But such is the case, for the space of the geometer is exactly the form of sensuous intuition which we find *a priori* in us, and contains the ground of the possibility of all external appearances (according to their form); and the latter must necessarily and most precisely agree with the propositions of the geometer, which he draws not from any fictitious concept but from the subjective basis of all external appearances, viz., sensibility itself. In this and no other way can geometry be made secure as to the undoubted objective reality of its propositions against all the chicaneries of a shallow metaphysics, however strange this may seem to a metaphysics that does not go back to the sources of its concepts.

REMARK II

Whatever is given us as object must be given us in intuition. All our intuition, however, takes place only by means of the senses; the understanding intuits nothing but only reflects. And as we have just shown that the senses never and in no manner enable us to know things in themselves, but only their appearances, which are mere representations of the sensibility, we conclude that "all bodies, together with the space in which they are, must be considered nothing but mere representations in us, and exist nowhere but in our thoughts." Now is not this manifest idealism?

Idealism consists in the assertion that there are none but thinking beings; all other things which we believe are perceived in intuition are nothing but representations in the thinking beings, to which no object external to them in fact corresponds.

|| On the contrary, I say that things as objects of our senses existing outside us are given, but we know nothing of what they may be in themselves, knowing only their appearances, i.e., the representations which they cause in us by affecting our senses. Consequently, I grant by all means that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representations which their influence on our sensibility procures us, and which we call bodies. This word merely means the appearance of the thing, which is unknown to us but is not therefore less real. Can this be termed idealism? It is the very contrary.

Long before Locke's time, but assuredly since him, it has been generally assumed and granted without detriment to the actual existence of external things that many of their predicates may be said to belong, not to the things in themselves, but to their appearances, and to have no proper existence outside our representation. Heat, color, and taste, for instance, are of this kind. Now, if I go further and, for weighty reasons, rank as mere appearances also the remaining qualities of bodies, which are called primary—such as extension, place, and, in general, space, with all that which belongs to it (impenetrability or materiality, shape, etc.)—no one in the least can adduce the reason of its being inadmissible. As little as the man who admits colors not to be properties of the object in itself but only to be modifications of the sense of sight should on that account be called an idealist, so little can my doctrine be named idealistic merely because I find that more, nay, *all the properties which constitute the intuition of a body belong merely to its appearance*. The existence of the thing that appears is thereby not destroyed, as in genuine idealism, but it is only shown that we cannot possibly know it by the senses as it is in itself.

I should be glad to know what my assertions must be in order to avoid all idealism. Undoubtedly, I should say that the representation of space is not only perfectly conformable to the relation which our sensibility has to objects—that I have said—but that it is completely like the object—an assertion in which I can find as little meaning as if I said that the sensation of red has a similarity to the property of cinnabar which excites this sensation in me.