with respect to all other sciences observes a wary silence, speaks masterfully, and boldly passes judgment in questions of metaphysics, because here to be sure their ignorance does not stand out clearly in relation to the science of others, but in relation to genuine critical principles, which therefore can be praised:

Ignorant, ficos, pecus a praesebibus arcen. Virgil.\textsuperscript{13}

\textsuperscript{13} "They protect the hives from the drones, an idle bunch." Virgil, Georgica, iv. 368.

Preamble on the Distinguishing Feature of All Metaphysical Cognition

\S 1

On the sources of metaphysics

If one wishes to present a body of cognition as science,\textsuperscript{a} then one must first be able to determine precisely the differentia it has in common with no other science, and which is therefore its distinguishing feature; otherwise the boundaries of all the sciences run together, and none of them can be dealt with thoroughly according to its own nature.

Whether this distinguishing feature consists in a difference of the object or the source of cognition, or even of the type of cognition, or some if not all of these things together, the idea of the possible science and its territory depends first of all upon it.

First, concerning the sources of metaphysical cognition, it already lies in the concept of metaphysics that they cannot be empirical. The principles\textsuperscript{b} of such cognition (which include not only its fundamental propositions\textsuperscript{c} or basic principles, but also its fundamental concepts) must therefore never be taken from experience; for the cognition is supposed to be not physical but metaphysical, i.e., lying beyond experience. Therefore it will be based upon neither outer experience, which constitutes the source of physics proper, nor inner, which provides the foundation of empirical psychology.\textsuperscript{d} It is therefore cognition \textit{a priori}, or from pure understanding and pure reason.

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{a} \textit{ernahrung als Wissenschaft}
  \item \textsuperscript{b} \textit{Prinzipen}
  \item \textsuperscript{c} \textit{Grundsätze}; the next three words are added by the translator as a gloss.
  \item \textsuperscript{d} \textit{empirischen Psychologic}
\end{itemize}
\end{footnotesize}
In this, however, there would be nothing to differentiate it from pure mathematics; it must therefore be denominated pure philosophical cognition; but concerning the meaning of this expression I refer to the *Critique of Pure Reason*, pp. 712 ff., where the distinction between these two types of use of reason has been presented clearly and sufficiently. – So much on the sources of metaphysical cognition.

§2

On the type of cognition that alone can be called metaphysical

(a) On the distinction between synthetic and analytic judgments in general

Metaphysical cognition must contain nothing but judgments a priori, as required by the distinguishing feature of its sources. But judgments may have any origin whatsoever, or be constituted in whatever manner according to their logical form, and yet there is nonetheless a distinction between them according to their content, by dint of which they are either merely explicative and add nothing to the content of the cognition, or ampliative and augment the given cognition; the first may be called analytic judgments, the second synthetic.

Analytic judgments say nothing in the predicate except what was actually thought already in the concept of the subject, though not so clearly nor with the same consciousness. If I say: All bodies are extended, then I have not in the least amplified my concept of body, but have merely resolved it, since extension, although not explicitly said of the former concept prior to the judgment, nevertheless was actually thought of it; the judgment is therefore analytic. By contrast, the proposition: Some bodies are heavy, contains something in the predicate that is not actually thought in the general concept of body; it therefore augments my cognition, since it adds something to my concept, and must therefore be called a synthetic judgment. ²


² The modern concept of body as developed by Descartes and other so-called “mechanical philosophers” was restricted to extension alone, and hence not weight, which was thought to arise from an external influence on bodies (such as, in Kant’s time, Newton’s attractive force). In *Metaphysical Foundations of Natural Science*, Second Chapter, Kant retained the definition of matter as extension (for spatial volume, § 4.523), but explained the extension and cohesion of bodies through repulsive and attractive forces.

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

All analytic judgments rest entirely on the principle of contradiction and are by their nature a priori cognitions, whether the concepts that serve for their material be empirical or not. For since the predicate of an affirmative analytic judgment is already thought beforehand in the concept of the subject, it cannot be denied of that subject without contradiction; exactly so is its opposite necessarily denied of the subject in an analytic, but negative, judgment, and indeed also according to the principle of contradiction. So it stands with the propositions: Every body is extended, and: No body is unextended (simple).

For that reason all analytic propositions are still a priori judgments even if their concepts are empirical, as in: Gold is a yellow metal; for in order to know this, I need no further experience outside my concept of gold, which includes that this body is yellow and a metal; for this constitutes my very concept, and I did not have to do anything except analyze it, without looking beyond it to something else.

(c) Synthetic judgments require a principle other than the principle of contradiction

There are synthetic judgments a posteriori whose origin is empirical; but there are also synthetic judgments that are a priori certain and that arise from pure understanding and reason. Both however agree in this, that they can by no means arise solely from the principle of analysis, namely the principle of contradiction; they demand yet a completely different principle, though they always must be derived from some fundamental proposition, whichever it may be, in accordance with the principle of contradiction; for nothing can run counter to this principle, even though everything cannot be derived from it. I shall first classify the synthetic judgments.

1. *Judgments of experience* are always synthetic. For it would be absurd to base an analytic judgment on experience, since I do not at all need to go beyond my concept in order to formulate the judgment and therefore have no need for any testimony from experience. That a body is extended, is a proposition that stands certain a priori, and not a judgment of experience.
For before I go to experience, I have all the conditions for my judgment already in the concept, from which I merely extract the predicate in accordance with the principle of contradiction, and by this means can simultaneously become conscious of the necessity of the judgment, which experience could never teach me.

2. Mathematical judgments are one and all synthetic. This proposition appears to have completely escaped the observations of analysts of human reason up to the present, and indeed to be directly opposed to all of their conjectures, although it is incontrovertibly certain and very important in its consequences. Because they found that the inferences of the mathematicians all proceed in accordance with the principle of contradiction (which, by nature, is required of any apodictic certainty), they were persuaded that the fundamental propositions were also known through the principle of contradiction, in which they were very mistaken; for a synthetic proposition can of course be discerned in accordance with the principle of contradiction, but only insofar as another synthetic proposition is presupposed from which the first can be deduced, never however in itself.

First of all it must be observed: that properly mathematical propositions are always a priori and not empirical judgments, because they carry necessity with them, which cannot be taken from experience. But if this will not be granted me, very well, I will restrict my proposition to pure mathematics, the concept of which already conveys that it contains not empirical but only pure cognition a priori.

One might well at first think: that the proposition } 7 + 5 = 12 is a purely analytic proposition that follows from the concept of a sum of seven and five according to the principle of contradiction. However, upon closer inspection, one finds that the concept of the sum of 7 and 5 contains nothing further than the unification of the two numbers into one, through which by no means is thought what this single number may be that combines the two. The concept of twelve is in no way already thought because I merely think to myself this unification of seven and five, and I may analyze my concept of such a possible sum for as long as may be, still I will not meet with twelve therein. One must go beyond these concepts, in making use of the intuition that corresponds to one of the two, such as one’s five fingers, or (like Segner in his arithmetic) five points.

and in that manner adding the units of the five given in intuition step by step to the concept of seven. One therefore truly amplifies one’s concept through this proposition } 7 + 5 = 12 and adds to the first concept a new one that was not thought in it; that is, an arithmetical proposition is always synthetic, which can be seen all the more plainly in the case of somewhat larger numbers, for it is then clearly evident that, though we may turn and twist our concept as we like, we could never find the sum through the mere analysis of our concepts, without making use of intuition.

Nor is any fundamental proposition of pure geometry analytic. That the straight line between two points is the shortest is a synthetic proposition. For my concept of the straight contains nothing of magnitude, but only a quality. The concept of the shortest is therefore wholly an addition and cannot be extracted by any analysis from the concept of the straight line. Intuition must therefore be made use of here, by means of which alone the synthesis is possible.

Some other fundamental propositions that geometers presuppose are indeed actually analytic and rest on the principle of contradiction; however, they serve only, like identical propositions, as links in the chain of method and not as principles: e.g., a = a, the whole is equal to itself, or (a + b) > a, i.e., the whole is greater than its part. And indeed even these, although they are valid from concepts alone, are admitted into mathematics only because they can be exhibited in intuition.

It is merely ambiguity of expression which makes us commonly believe here that the predicate of such apodictic judgments already lies in our concept and that the judgment is therefore analytic. Namely, we are required to add in thought a particular predicate to a given concept, and this necessity is already attached to the concepts. But the question is not, what we are required to add in thought to a given concept, but what we actually think in it, even if only obscurely, and then it becomes evident that the predicate attaches to such concepts indeed necessarily, though not immediately, but rather through an intuition that has to be added.

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4 The following five paragraphs are taken from §4 in accordance with Vaihinger’s galley-switching thesis (see Note on Transl.)
The essential feature of pure mathematical cognition, differentiating it from all other a priori cognition, is that it must throughout proceed not from concepts, but always and only through the construction of concepts (Critique, p. 713). Because pure mathematical cognition, in its propositions, must therefore go beyond the concept to that which is contained in the intuition corresponding to it, its propositions can and must never arise through the analysis of concepts, i.e., analytically, and so are one and all synthetic.

I cannot, however, refrain from noting the damage that neglect of this otherwise seemingly insignificant and unimportant observation has brought upon philosophy. Hume, when he felt the call, worthy of a philosopher, to cast his gaze over the entire field of pure a priori cognition, in which the human understanding claims such vast holdings, inadvertently lopped off a whole (and indeed the most considerable) province of the same, namely pure mathematics, by imagining that the nature and so to speak the legal constitution of this province rested on completely different principles, namely solely on the principle of contradiction; and although he had by no means made a classification of propositions as formally and generally, or with the nomenclature, as I have here, it was nonetheless just as if he had said: Pure mathematics contains only analytic propositions, but metaphysics contains synthetic propositions a priori. Now he erred severely in this, and this error had decisively damaging consequences for his entire conception. For had he not done this, he would have expanded his question about the origin of our synthetic judgments far beyond his metaphysical concept of causality and extended it also to the possibility of a priori mathematics; for he would have had to accept mathematics as synthetic as well. But then he would by no means have been able to found his metaphysical propositions on mere experience, for otherwise he would have had to subject the axioms of pure mathematics to experience as well, which he was much too reasonable to do. The good company in which metaphysics would then have come to be situated would have secured it against the danger of scornful mistreatment; for the blows that were intended for the latter would have had to strike the former as well, which was not his intention, and could not have been; and so the acute man would have been drawn into reflections which must have been similar to those with which we are now occupied, but which would have gained infinitely from his inimitably fine presentation.

3. Properly metaphysical judgments are one and all synthetic. Judgments belonging to metaphysics must be distinguished from properly metaphysical judgments. Very many among the former are analytic, but they merely provide the means to metaphysical judgments, toward which the aim of the science is completely directed, and which are always synthetic. For if concepts belong to metaphysics, e.g., that of substance, the judgments arising from their mere analysis necessarily belong to metaphysics as well, e.g., substance is that which exists only in subject etc., and through several such analytic judgments we try to approach the definition of those concepts. Since, however, the analysis of a pure concept of the understanding (such as metaphysics contains) does not proceed in a different manner from the analysis of any other, even empirical, concept which does not belong to metaphysics (e.g., air is an elastic fluid, the elasticity of which is not lost with any known degree of cold), therefore the concept may indeed be properly metaphysical, but not the analytic judgment; for this science possesses something special and proper to it in the generation of its a priori cognitions, which generation must therefore be distinguished from what this science has in common with all other cognitions of the understanding; thus, e.g., the proposition: All that is substance in things persists, is a synthetic and properly metaphysical proposition.

If one has previously assembled, according to fixed principles, the a priori concepts that constitute the matter of metaphysics and its building material, then the analysis of these concepts is of great value; it can even be presented separately from all the synthetic propositions that constitute metaphysics itself, as a special part (as it were as philosophia definitiva) containing nothing but analytic propositions belonging to metaphysics.

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6 In fact, in the Treatise Hume had raised objections to the notions of equality and congruence (among others) in geometry, which objections appealed to experience (Treatise, i.ii.4.4, pp. 42–53), thereby subjecting mathematics to experience, and he also rejected the conception that mathematics considers its objects independently of their existence in nature; in the Inquiry he ascribed the basis of mathematics to judgments of relations of ideas, that is, to propositions which "are discoverable by the mere operation of thought, without dependence on what is anywhere existent in the universe" (sec. 4, pt. 1). (In 1783 Kant would not have been directly acquainted with the passage from the Treatise.)

7 In the corresponding section of the Critique of Pure Reason (4.17–18), a paragraph on natural science occurs here, with the heading: "Natural science (physics) contains within itself synthetic judgments a priori"; as examples of such judgments, it gives the conservation of the quantity of matter in the world, and the equality of action and reaction.

For in fact such analyses do not have much use anywhere except in metaphysics, that is, with a view toward the synthetic propositions that are to be generated from such previously analyzed concepts.

The conclusion of this section is therefore: that metaphysics properly has to do with synthetic propositions a priori, and these alone constitute its aim, for which it indeed requires many analyses of its concepts (therefore many analytic judgments), in which analyses, though, the procedure is no different from that in any other type of cognition when one seeks simply to make its concepts clear through analysis. But the generation of cognition a priori in accordance with both intuition and concepts, ultimately of synthetic propositions a priori as well, and specifically in philosophical cognition, forms the essential content of metaphysics.

§3

Note on the general division of judgments into analytic and synthetic

This division is indispensable with regard to the critique of human understanding, and therefore deserves to be classical in it; other than that I don’t know that it has much utility anywhere else. And in this I find the reason why dogmatic philosophers (who always sought the sources of metaphysical judgments only in metaphysics itself, and not outside it in the pure laws of reason in general) neglected this division, which appears to come forward of itself, and, like the famous Wolff, or the acute Baumgarten following in his footsteps, could try to find the proof of the principle of sufficient reason, which obviously is synthetic, in the principle of contradiction. By contrast I find a hint of this division already in Locke’s essays on human understanding. For in Book 4, chapter 3, §§9 f., after he had already discussed the various connections of representations in judgments and the sources of the connections, of which he located the one in identity or contradiction (analytic judgments) but the other in the existence of representations in a subject (synthetic judgments), he then acknowledges in §10 that our cognition (a priori) of these last is very constricted and almost nothing at all. But there is so little that is definite and reduced to rules in what he says about this type of cognition, that it is no wonder if no one, and in particular not even Hume, was prompted by it to contemplate propositions of this type. For such general yet nonetheless definite principles are not easily learned from others who have only had them floating obscurely before them. One must first have come to them oneself through one’s own reflection, after which one also finds them elsewhere, where one certainly would not have found them before, because the authors did not even know themselves that their own remarks were grounded on such an idea. Those who never think for themselves in this way nevertheless possess the quick-sightedness to spy everything, after it has been shown to them, in what has already been said elsewhere, where no one at all could see it before.

9 Christian Wolff (1679–1754) was the most important German philosopher of the mid-eighteenth century; Alexander Gottlieb Baumgarten (1714–62) was an important follower.
10 Baumgarten, *Metaphysica*, 7th edn. (Halle, 1779), §§10, 20–2. (On this work and Kant’s familiarity with it, see the Introduction.)
11 In his description of Locke’s work, Kant uses the term Vorstellungen for what Locke called “ideas”; Kant’s term is here translated as “representation,” as in the rest of this volume.