

Critique of Pure Reason --2nd ed. Preface

Whether the arrangement of the knowledge [Erkenntnisse=cognitions] which belongs to the enterprise of reason does or does not follow the secure path of a science [den sicheren Gang einer Wissenschaft] is easily assessed from the outcome. For if after many elaborate preparations, as soon as it arrives near its goal, it is brought to a stop; or, in order to reach its goal, it often must return and step out on another path [Weg]; also, if it is not possible to make unanimous the different collaborators in the method of achieving the mutual goal; then one can be satisfied that such a study has not yet struck the secure path of a science, but is a mere groping about [ein blosses Herumtappen]. And it is already a service to reason to trace out this path [diesen Weg], if possible, even should much have to be relinquished as futile which was contained in the previously accepted goals.

That logic has already, from the earliest times, entered upon this secure path [diesen sichern Gang] is gathered from [the fact] that since Aristotle no regress [keinen Schritt rückwärts=no footstep backwards] has been required, if one does not count the removal [Wegschaffung=clearing away, path-making] of several dispensable subtleties or the clearer exposition of its recognized teachings as improvements, which things belong more to elegance than to the certainty of the science [Sicherheit der Wissenschaft]. Still, it is remarkable that, to the present, it has been able to make no progress forward [keinen Schritt vorwärts], and thus in all aspects seems to be closed and complete. For if several moderns thought to expand it owing to the fact that they inserted partly psychological chapters on the different faculties of knowledge (imagination, wit), partly metaphysical chapters concerning the origin of knowledge, or the different kinds of certainty according to difference in the objects (idealism, skepticism, etc.), partly anthropological chapters on prejudices (their causes and remedies), so this originates from their ignorance of the peculiar nature of this science. It is not an addition to but a diminishment of the sciences, if one allows their boundaries to run into one another; but the boundary of logic is quite accurately fixed [bestimmt=determined], owing to the fact that it is a science which specifies exhaustively nothing other than the formal rules of all thought (it might be a priori or empirical, have a source or object which it will come across in accidental or natural hindrances in our minds.)

That logic has been so successful, this advantage it owes entirely to its restriction, through which it is warranted, indeed is obligated, to abstract from all objects of knowledge and their differences, and thus the understanding has to do with nothing further than itself and its form. Naturally, it must be more difficult for reason to strike upon the secure path of a science [den sicheren Weg der Wissenschaft einzuschlagen], if reason has to work not only with itself but also with objects; hence, logic as a propaedeutic constitutes only the vestibule [Vorhof=outer court] of the sciences, and when the discussion is of modes of knowledge, one of course presupposes a logic for a critical examination of the modes of knowledge, but one must seek the acquisition of the cognitions in the sciences properly and objectively so-called.

Now, insofar as reason is to be in these sciences, so must something in them be known a priori, and this knowledge can be related to its object [Gegenstand] in two ways, either as merely determining it and its concept (which must be given from elsewhere) or as also making it actual. The first is theoretical, the other practical knowledge of reason. In both, the pure part must, as much or as little as it may contain that part in which reason

completely determines a **priori** its object, be executed first and alone, and that part which comes from other sources [must] not be confounded with it; for it is bad management if one blindly gives out what comes in without later, if the former falls into debt, being able to discern which part of the income can bear the expenses, and of which [part] one must reduce the same.

Mathematics and physics are both theoretical modes of knowledge of reason, which must determine a **priori** their objects, the first quite purely, the second at least to some extent purely, but also according to other sources than that of reason.

Mathematics had, from the earliest times to which the history of human reason extends, among that wonderful people the Greeks, entered upon the secure path of a science [**den sicheren Weg einer Wissenschaft**]. However, it is not to be assumed that it was as easy for mathematics as it was for logic, wherein reason has to do only with itself, to strike upon or rather to clear the way for that royal road [**jenen königlichen Weg**]; on the contrary, I believe that it long remained, especially among the Egyptians, a groping about [**Herumtappen**], and this transformation is to be attributed to a revolution, which the happy inspiration of a single man achieved in an experiment, which in respect to the road which one must take, was no longer to miss the mark but succeeded, and traced out the secure path of a science for all time and in endless extension. The history of this intellectual revolution, which was more momentous than the discovery of the route [**des Weges**] around the celebrated Cape and of the fortunate one who accomplished it, was not kept for us. Nevertheless, the tradition is substantiated which Diogenes Laertius hands down to us, who names the alleged inventor of the least, and according to ordinary judgment does not even need a proof, of the elements of geometrical demonstrations, that the memory of the transformation which was brought about by the first trace of the discovery of this new path [**dieses neuen Weges**], must have appeared of utmost importance to mathematicians and, because of that, became unforgettable. A light flashed upon the first man who demonstrated the [properties of] the isosceles triangle (whether he be called Thales or some other); for he found that he does not investigate [**nachspüren**=trace after, spy] and thereby copy its properties from that which he saw in the figure or even in the bare concept of it; rather, he must bring out what he thought in and presented to himself (through construction) according to a **priori** concepts. In order for him to know a **priori** something with certainty, he must not ascribe to the thing anything other than what necessarily followed from that which he himself has placed in it according to his concept.

With natural science, it was far longer until it hit upon the highway [**Heeresweg**] of science; for it is only about a century and a half that the proposal of the ingenious [**sinnreichen**=sense-rich] Bacon of Verulam partly caused this discovery, partly invigorated those who were already on its trail. Even so, this discovery can just as well be explained as the outcome of an abrupt revolution in thought [**eine schnell vorgegangene Revolution der Denkart**]. I will here take into consideration natural science only insofar as it is grounded in empirical principles.

When Galileo caused his balls to roll down the inclined plane with a weight pre-selected by himself, or Torricelli made the air carry a weight which he himself had considered equal to a known water volume, or at a still later time [when] Stahl changed metals into oxides and these again into metals (in that he withheld something and gave it back), a light flashed upon all students of nature. They realized that reason only inspects that which it brings forth according to its own model [**Entwurf**=outline, blueprint, plan], so

that reason leads the way with principles [Prinzipien] of judgment based on invariant laws [Gesetzen], and that reason compels Nature to answer her questions, not however allowing herself to be in leading-strings from Nature alone. For otherwise, random observations are connected according to no previously designed plan [keinem vorher entworfene Plane], certainly not connected in a necessary law [Gesetz], which reason seeks and demands. Reason must go to Nature, holding in one hand her Principles [Prinzipien], according to which she considers only agreeable appearances as laws [übereinkommende Erscheinungen für Gesetze], and in the other hand the Experiment which it devised in accordance with these principles. Certainly, one must go to Nature in order to be taught by it, not in the character of a pupil who must recite everything which the teacher wishes, but of an appointed judge who compels the witnesses to answer the questions which he submits to [vorlegt= lays before] them. And thus, even physics owes the beneficial revolution of its method of thought [vorteilhafte Revolution ihrer Denkart] exclusively to the inspired idea that whatever reason herself places in Nature accords with the idea of seeking in it (not attributing to it) what she must learn from Nature, and of which she would know nothing from herself alone. By this means, natural science has been brought first and foremost onto the secure path of a science [in den sicheren Gang einer Wissenschaft], when it had been through so many centuries nothing more than an empty groping about [ein blosses Herumtappen].

Metaphysics, a completely isolated speculative rational knowledge, soars wholly above the instruction of experience, and by means of concepts alone (not like mathematics through application of concepts to intuition), where reason intends to be her own pupil. Metaphysics has not had the good fortune that it be able to enter upon the secure path of a science [den sicheren Gang einer Wissenschaft einzuschlagen], although it is all the same older than all the rest and would remain even if the others should be devoured completely in the jaws of an all-consuming barbarism. For in metaphysics, reason constantly comes to a stop, even when she wishes to examine a priori the laws our most common experiences confirm. Countless times, one must take a step back on the path [den Weg zurück tun] because one finds that he does not travel where he desires [to go], and as for the unanimity of students in their claims [Behauptungen], it is still so remote that metaphysics is on the contrary a battleground, which appears to be quite peculiarly suited to the end of exercising one's powers in mock combats [Spielgefechte], in which no combatant ever yet has gained even the smallest place, and upon which his victory could establish a lasting possession [Besitz=estate]. There is also no doubt that the procedure of metaphysics until now has been an empty groping around [ein blosses Herumtappen], and what is worse, among mere [blossen=bare, empty] concepts.

What is the reason then that [in metaphysics] no secure path of science [kein sicherer Weg der Wissenschaft] has been found? Why then has Nature haunted [heimgesucht=afflicted, infested] our reason with the restless aspiration to investigate [nachzuspüren=trace, track], as if [it were] one of her most pressing concerns? Even more, how little cause do we have to place trust in our reason, if she not only deserts us in one of the most important parts of our thirst for knowledge, but keeps us in suspense through delusions [Vorspielungen=prologues] and in the end betrays us! Or has it only till now failed us? Which information can we employ in order to expect, with renewed inquiries [Nachsuchen=searches], that we will be more fortunate than others who have been before us?

I should think, the examples of mathematics and natural science [Naturwissenschaft], which by a single completed revolution have become what they now are, would be remarkable enough to reflect on the essential parts of the change in the way of thinking which has been so beneficial for them, and so far as their analogy, as rational forms of knowledge, with metaphysics permits, to imitate [nachzuahmen] them, at least by way of experiment [zum Versuche]. Hitherto one assumed, all our knowledge must conform to objects [sich nach den Gegenständen richten=direct itself toward, be governed by]; but, all experiments [Versuche] to determine anything a priori concerning them, through which our knowledge would be extended, have on this assumption, come to nothing. Therefore, one should experiment [versuche] once, whether we may not make better progress in the tasks of metaphysics, if we assume that objects must conform to our knowledge. This assumption agrees much better with the desired possibility of knowledge a priori, which should establish something concerning objects before they are given to us. Hence, with this assumption it is as the matter stood with the first thought of Copernicus, who after it was not progressing well by explaining the motions of the heavens when he assumed the whole starry host revolved around the spectator, experimented [versuchte] whether it might not succeed better if he allowed the the spectator himself to revolve [den Zuschauer sich drehen] and the starry heavens to remain at rest. In metaphysics, one can now experiment [kann man...versuchen] in a similar fashion, as concerns the intuition of objects [die Anschauung der Gegenstände]. If intuition must conform itself to the nature of the objects, then I cannot understand how one could know a priori anything of them; but if the object (as object of the senses) must conform to the constitution of our faculty of intuition, then I can conceive this possibility quite well. But, since I cannot come to a standstill with these intuitions, if they are to become knowledge, but must relate them as representations [Vorstellungen] to something as object, and determine this object through them, either I must assume the concepts, through which I bring about these determinations, conform to the objects, or I assume the objects, or what is the same, the experience, in which they alone (as given objects) can be known, conforms to the concept. [If the concepts conform to the objects] then I am in the same predicament as to how I could know something a priori of the objects. [If objects conform to the concepts] I see a more hopeful inquiry, because experience itself is a way of knowing which requires understanding; and the understanding has rules which I must presuppose as being in me [in mir] prior to objects being given to me [ehe mir ... gegeben werden], thus as being a priori. These rules are expressed in a priori concepts, to which all objects of experience necessarily must conform, and with which they must agree. As regards objects, insofar as they are thought only through reason and indeed necessarily, but which (at least, as reason thinks them) cannot be given in experience, the experiments [die Versuche] at thinking them (for they must allow of being thought) will furnish an exquisite touchstone [einen herrlichen Probestein] which we may embrace as the changed method of thought, namely that we know a priori of the things only what we ourselves put into them.

This experiment [Versuch] succeeds as desired, and promises to metaphysics, in its first part – that part which is occupied with a priori concepts, of which the corresponding objects, commensurate to them, can be given in experience – the secure path of a science [den sicheren Gang einer Wissenschaft]. For one can, according to this changed way of thinking, explain the possibility of knowledge a priori quite well, and what is even more, one can provide satisfactory proofs of the laws which lay a priori at the basis of nature

(understood as the totality of the objects of experience), both of which were impossible according to the former methods of treatment. But there follows from this deduction of our capacity to know a priori, in the first part of metaphysics, a result that is disturbing and which has the appearance of being very detrimental to the whole purpose of metaphysics, with which the second half is concerned. That result is that we can never transcend the limits of possible experience, which is precisely the essential task of this science. But herein lies the very experiment [das Experiment] as a control test of the truth of this first estimate of our a priori knowledge of reason, namely that it has only to do with appearances, and leaves alone the thing in itself as indeed real in itself, but unknown by us. For that, which necessarily propels us to go out beyond the limits of experience and of all appearances, is the Unconditioned [das Unbedingte], which reason demands in things in themselves [Dingen an sich], by necessity and with every right to all restrictions, and thereby claims the series of conditions as completed. Now one finds, if one assumes our knowledge of experience conforms to objects as things in themselves, that the Unconditioned cannot at all be thought without contradiction; on the contrary, if one assumes our representation of things, as they are given to us, do not conform to these as things in themselves, but rather these objects, as appearances, conform to our mode of representation, the contradiction disappears. Consequently, the Unconditioned is not to be met with in things insofar as we know them (they are given to us), but only so far as we do not know them (as things in themselves): hence, it appears that what we in the beginning assumed or undertook as an experiment [zum Versuche annahm] is now confirmed or grounded. Now, it always remains for us, after speculative reason has been denied progress in this field of the supersensible, to experiment [zu versuchen] whether data is not found in the practical knowledge of reason to determine reason's transcendent concept of the Unconditioned, and in this way, in accordance with the desire of metaphysics, to reach out beyond the bounds of all possible experience with our knowledge that is possible a priori, though only from a practical point of view. And by such a procedure, speculative reason has created at least a place for such an extension; and if it must at the same time leave it empty, we are yet at liberty, indeed we are summoned, to fill out [auszufüllen=complete, supply a deficiency in] speculative reason by means of the practical data of reason.

In this experiment, in order to change the previous methods of metaphysics, and so that we undertake a complete revolution [eine gänzliche Revolution] according to the examples of the geometer and natural scientist, consists the main concerns of this critique of pure reason. It is a treatise on method not a system of the science itself; but it records all the same the whole outline of the science, not only in respect of its boundaries, but also as regards its whole internal framework.

Immanuel Kant,

Bvii-Bxxii, Critique of Pure Reason; trans. D.L. Hale