The Metaphor of the Judge in the "Critique of Pure Reason" (B xiii f): A Key for Interpreting the Kantian Theory of Knowledge†

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1. The Metaphor of the Judge in the Preface to the Second Edition

In the Preface to the Second Edition of the "Critique of Pure Reason," Kant speaks of this work as adopting a radically new method of thought (B xviii). Only such a transformation, he says, is able to achieve that "reform of metaphysics" for the sake of which Lambert, as far back as 1765, had invited him to pool their efforts.[1] But in the Preface to the First Edition his speculations had already been concentrated on this reform of metaphysics, for the sake of which human reason found itself constrained "to undertake anew the most difficult of all its tasks, namely, that of self-knowledge" (A xi).

In these comments from April 1787, Kant sees his reform of metaphysics as an instance - no doubt the most important one - of a conclusion he had reached in his pursuit of self-knowledge, i.e., "that we can know *a priori* of things only what we ourselves put into them" (B xviii). He himself popularized his insight by comparing it to the primary hypothesis of Copernicus (B xvi). The "Copernican turn" thereby became the slogan for this "new method of thought" (B xviii), which in reality was a "revolution" (B xi, xii, and xiii).

† [Originally published in *Universitas Monthly Review of Philosophy and Culture*, n. 357 (vol. 31, n. 2) February 2004, pp. 13-35, and now published as an Internet edition with the author's permission. Donald E. Buzzelli of Washington, D.C. translated the original Italian into English to prepare it for publication].

1Cf. Kant's letter to Johann Bernoulli, October 16, 1781. Quotations in Roman numerals followed by Arabic numerals refer to volume and page numbers in the Academy edition of the works of Kant. But quotations to the "Critique of Pure Reason" refer to page numbers in the A or in the B original editions. Quotations from the "Critique of Pure Reason" will employ the Norman Kemp Smith translation with my emphases.

> Hitherto it has been assumed that all our knowledge must conform to objects. But all attempts to extend our knowledge of objects by establishing something in regard to them *a priori*, by means of concepts, have, on this assumption, ended in failure. We must therefore make trial whether we may not have more success *in the tasks of metaphysics*, if we suppose that objects must conform to our knowledge. This would agree better with what is desired, namely, that it should be possible to have knowledge of objects *a priori*, determining something in regard to them prior to their being given" (B xvi).

This "changed point of view" (B xvi) had already been achieved in mathematics by the ancient Greeks and recently had occurred in natural science also. Its thematization is the core of the new metaphysics that Kant proposes to develop.

The metaphor of the judge that I intend to study in this paper is found in this context. From the history of modern natural science Kant cites three cases as examples of the new method. This method is described in the following way with regard to its epistemological significance:

> A light broke upon all students of nature. They learned that reason has insight only into that which it produces after a plan [*Entwurf*: blueprint, project] of its own, and that it must not allow itself to be kept, as it were, in nature's leading-strings, but must itself show the way with principles of judgment based upon fixed laws, constraining nature to give answer to questions of reason's own determining. Accidental observations, made in obedience to no previously thought-out plan, can never be made to yield a necessary law, which alone reason is concerned to discover. Reason, holding in one hand its principles, according to which alone concordant appearances can be admitted as equivalent to laws, and in the other hand the experiment which it has devised in conformity with these principles, must approach nature in order to be taught by it. It must not, however, do so in the character of a pupil who listens to everything that the teacher chooses to say, but of an appointed judge who compels the witnesses to answer questions which he has himself formulated. Even physics, therefore, owes the beneficent revolution in its point of view entirely to the happy thought, that while reason must seek in nature, not fictitiously ascribe to it, whatever as not being knowable through reason's own resources has to be learnt, if learnt at all, only from nature, it must adopt as its guide, in so seeking, that which it has itself put into nature" (B xiii f).

This text is usually understood as an anticipation of the "changed point of view" in metaphysics that follows soon after (B xvi), i.e., as another way of saying that objects must conform to our knowledge. Under this interpretation the text about metaphysics (B xvi) would be nothing but a generalization of the text about natural science (B xiii f). This latter text, in which the comparison with the judge appears, would therefore be adequately expressed by saying that our understanding is itself

the "lawgiver" of nature (A 126), or again by saying that the understanding is itself "the author of the experience" (B 127). There is no doubt that Kant understood the passage B xiii f in that sense, since he connects what he says about the judge with what has happened in physics: "even physics."

The purpose of the present study is to show that the passage B xiii f, and in particular the comparison with the judge, should nonetheless be understood in a more differentiated way than it is in these simplified formulae. By analyzing the metaphor of the judge we will clarify the core of the transcendental philosophy. Kant identifies this core as the legislative function of the understanding with respect to nature. But in my opinion this metaphor, together with the idea of a legislative activity, also contains another idea, that of verification through critical reflection. Therefore both ideas must be held together, if one wishes to keep transcendental reflection from ending up in a transcendental idealism that makes man a kind of creator of the world and, just for that reason, does not do justice to human knowledge as it in fact is. The exegetical reflections that follow will lead us to discuss the issue itself, i.e., to the role that the subject plays in objectively valid knowledge.[2] In other words, a different and better grounded interpretation of the judge's questioning leads to a different understanding of the procedures of natural science, and of human knowledge in general.

2. Kant's Interpretation of the Procedures of Experimental Science and the Comparison with the Judge's Interrogation

2In the article "Erfinder und Entdecker oder Richter der Natur? Die Kantische Richter-Metapher und die Selbstlosigkeit der modernen Naturwissenschaften," *Zeitschrift fur philosophische Forschung* 43 (1989) 32-57, Werner Kutschmann examined the metaphor of the judge in order to see to what extent it is able to express the role of the scientist in science, as that is conceived today. In fact, science today wishes to dominate nature much more than it wishes to express an impartial judgment about it. Such an employment of the metaphor does not fall within the scope of my present article, which is meant to concentrate on the significance of the metaphor for the theory of knowledge and for metaphysics.

In our principal text (B xiii f) two series of assertions must be distinguished. Kant does not make this distinction clearly, which is why his application of the metaphor to science does not do justice to the actual procedures of science.

1) "Reason has insight only into that which it produces [*hervorbringt*] after a plan of its own." The revolutionary character of modern physics consists in its seeking in nature that which reason "has itself put into [*hineingelegt*] nature." A little farther on in B xviii we read: "We can know *a priori* of things only what we ourselves put into them."[3] All these expressions move in the direction of a thetic (idealist) conception of knowledge. Still, one cannot help seeing a certain tension in them, since Kant speaks not only of a producing and a putting into, but also of a seeking and a learning.

How are this seeking and learning supposed to occur? They must occur in accordance with, i.e., under the guidance of, what reason puts into nature. But with this, the "putting into" acquires a meaning different from the passages where Kant speaks in an undifferentiated way of the understanding as "lawgiver" (A 126), or of our mind as originally introducing order and regularity into nature (A 125), or of a "putting" concepts into experience (A 196), or of an "as it were (!) prescribing [of] laws to nature" (B 159; "Prolegomena" IV 320), or of a "previous *a priori* putting into" according to the nature of our understanding ("Über eine neue Entdeckung", VIII 216). Such a "putting into" or "prescribing" for the purpose of seeking (which Kant expressly distinguishes from a "fictitiously ascribing") can have only a hypothetical significance. It is like a "plan," as Kant puts it, with which the scientist approaches nature, but it cannot be a real prescribing of laws *a priori* (B 163). It is not yet determined whether what reason anticipates with its plan or its question really is in nature.

Kant saw that scientific procedures include both a moment of projection, anticipation, and

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3Kant believes he has grasped the procedures of modern scientists with this principle, and expresses it several times in pregnant formulae. Cf. in Hermann Schmitz, *Was wollte Kant?*, Bonn 1989, 345-347, a series of passages with this sense, together with reflections on Vico's principle, "*Verum est factum*."

creativity in which the subject has the initiative, and also a moment of verification in which the object has the initiative, but he did not succeed in grasping exactly how these two moments are related. Consequently he tends again and again to formulate the first moment in a way that makes the second, seeking to learn, impossible.

2) The second series of assertions emphasizes the moment of planning as being, at first, only planning [projecting]. Hence it is clearly distinguished from the subsequent moment of verification, which aims at arriving at a knowledge of how things truly are. Reason, holding in one hand the principles of its judgments according to constant laws, must go ahead and compel nature to answer its questions. The moment of planning takes place in the form of questions.

Reason, holding in the other hand the experiment, which it has devised in conformity with these principles, must approach nature in order to be taught by it. Only because of the principles of reason can the appearances (or, better, the data) be put into that connection that constitutes a determinate law. In other words, reason grasps as an explanation of the data only what it itself with its plan [projection] has (hypothetically!) anticipated; it finds only what it asks about. The experiment then plays the role of an arbiter with respect to the planning and creative moment. Through the experiment the scientist seeks to know whether his plan is only his own idea, however brilliant, or whether it corresponds to reality.

It remains to clarify what exactly those "principles" are with which reason must go ahead in its effort to arrive at knowledge of nature. An answer to this question would refer, in Kant's sense, to the categories of the pure understanding in the first part of the Analytic in the "Critique of Pure Reason", to the synthetic principles of the pure understanding in the second part, and also to the transcendental ideas in the Dialectic with their regulative use. Furthermore, Kant is thinking of a system of principles, like those he developed in the "Metaphysical Foundations of Natural Science" of 1786. According to a study by P. Plaass, the "Metaphysical Foundations" provide "a system of principles that indicate how what is sought is manifested in appearances, i.e., in motions." They represent "the canon, deduced a

priori with necessity, of that which reason must put into nature and in conformity with which it must interrogate nature."[4]

In our text Kant uses an analogy to illustrate the way reason with its principles approaches nature in order to learn from it. This analogy proves to be very useful for grasping how the two moments (the creative moment of planning and the critical moment of verifying) are related to each other. It is taken from the law, something that Kant likes to do. Reason, with its principles (its intelligent plan) in one hand, and with the experiment in the other, approaches nature "in order to be taught by it." How is this learning supposed to take place? It is not, says Kant, the learning of a pupil "who listens to everything that the teacher chooses to say."[5] The scientist's learning, rather, takes place in the manner "of an appointed judge who compels the witnesses to answer questions which he has himself formulated."

If we now apply the procedures of natural sciences to the judge, who operates in the context of the law (which belongs to the human sciences), the procedures take the following form. The judge is in search of a definite fact in accordance with a code of civil or penal law. The witnesses know better than he what happened. Nevertheless, the law entrusts the decision about what happened not to the witnesses, but to the judge. The witnesses, as persons of common sense, know the event in its existential aspect, as a part of daily life, like a fraud in business, a traffic accident, a family tragedy, etc. But this does not directly interest the judge in his capacity as a judge. What he wants to know is the event as a fact that falls under the code of civil or penal law; he wants to attain knowledge of a juridical

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4Peter Plaass, *Kants Theorie der Naturwissenschaft. Eine Untersuchung zur Vorrede von Kants "Metaphysischen Anfangsgründen der Naturwissenschaft*, Gottingen 1965, 119. Plaass repeats without any objection Kant's equating of "putting into" with "questioning." The purpose of my reflections is to show that "questioning," with its *a priori* element, is not at all the same as "putting into." Or, better, that "putting into" with a view to a "questioning" has a different meaning from what Kant obviously intends in his "Transcendental Deduction of the Pure Concepts of Understanding." There he says that the "connection and unity of appearances [a result of the legislative activity of the understanding] (in the representation of an object) are to be met with only in ourselves." (A 130)

5Here Kant simplifies the pupil's task in order to bring out the contrast with the way the judge proceeds. Although the pupil is not engaged in formal inquiry, his learning still is not a wholly passive process.

reality, about which he will then have to pass sentence according to the code of law.

In order to arrive at knowledge of this reality, the judge asks specific questions, questions that are relevant from the point of view of the law. He certainly learns about the case from the witnesses, since he was not present at the event himself, but he would not obtain the knowledge that interests him if he did not have a plan of it, an anticipatory hypothesis. He knows the elements that make up a juridical fact, and therefore he asks corresponding questions. The judge does not impose anything onto reality; rather, he imposes onto the data that are provided to him a certain interpretation as a possible explanation of those data. He wants to know the reality as it is. But precisely in order to know it objectively he has to take the initiative. He can do this because he, and not the witnesses, possesses the science that makes it possible for the legal reality to reveal itself. This possession amounts to an *a priori* with respect to the fact that is to be known.

Only by virtue of questions can the simple data provided by the witnesses become understood data. They thus become a definite legal fact that, possibly, is the juridical reality of the event. Starting with this intelligibility that interprets the event, and evaluating all its elements, as well as clues and circumstances, the judge reaches a certainty that is sufficient for him to issue his sentence rationally and responsibly. This weighing of all the elements available to the judge constitutes the moment of verification of what previously was only an explanatory hypothesis. Here we have the counterpart of the experiment in natural science, which has the purpose of deciding about the truth of a previous explanatory hypothesis, and thus about the actual existence of the understood reality which is meant.

3. The Question and the Pre-Knowledge That Makes It Possible

In the example of the judge, the key element is the question. On the basis of his legal knowledge, the judge asks questions that are intended to enable him to grasp a legally defined fact. Similarly, the

scientist in his investigation of nature formulates hypotheses as a possible explanation of a natural phenomenon, forcing nature to answer his questions. The defining characteristic of a scientific explanation is that in it things are considered in their mutual relations (and not in relation to the subject!), and that these relations are grasped in their quantitative aspects and expressed mathematically. Something analogous can be said of the historian in his researches into the past, of the man of common sense, etc. In all these cases the person approaches reality with a specific knowledge, with a pre-knowledge that makes it possible to ask questions about a reality and to know it under a specific aspect.

The study of hermeneutics has brought to light this condition for knowledge as it is found in the human sciences, and has called it "Vorverständnis" (preconception). Here, in the context of the metaphor of the judge, I would like to call attention to two things. First, the need for a "Vorverständnis" - and thus for a (relative) *a priori* - in order to be able to know something at all, is not limited to the human sciences. Second, rather than a "Vorverständnis," one should speak of a pre-knowledge, since this condition of the possibility of knowledge ultimately aims not only at understanding ("Verstehen") things, but at knowing them. It is true that this pre-knowledge first of all grounds a question for intelligence ("what is this?"), but the same pre-knowledge plays a no less decisive role in the subsequent moment, which is introduced by a question for reflection: "is it so?" This leads to the judgment, in which the object, that at first was only thought, is known in its status as a reality.[6]

6The use of the term "Vorverständnis" depends on the fact that, since Dilthey, the distinction has been made between comprehending ("Verstehen"), which refers to the human world, and explaining ("Erklären"), which refers to nature. Though it has a justification, this distinction should not lead us to overlook the fact that both, in the so-called "Geisteswissenschaften" and in natural science, knowledge of reality does not occur in the "comprehending" or in the "explaining" since both are instances of "understanding," but in the subsequent moment of judging. Consequently, one should say that human knowledge consists of a threefold structure of experience, understanding (either "Verstehen" or "Erklären"), and judgment.

There are various kinds of pre-knowledge, which lead to various kinds of questions. But since they all have been acquired, they all are *a posteriori*. They are *a priori* only in relation to the knowledge we are seeking at the moment. The judge acquired his legal knowledge at the university and in his professional practice. Similar forms of learning are the basis of the pre-knowledge of the scientist, the historian, the man of common sense. The mentality of the man of common sense varies according to the time and place in which he lives and is brought up. This pre-knowledge is a knowledge of a determinate content, of specific objects, since it consists of all one knows about objects of the natural world and of the human world.

This determinate pre-knowledge is acquired by asking questions, but questions ultimately are grounded in another pre-knowledge that is purely and entirely *a priori*. Such a knowledge is subjective (rather than objective), in the sense that it consists in the awareness that a person has of his own intelligence and rationality. And it is operative in that from it proceed all questions and the whole process of passing from questions to answers. Such a pure pre-knowledge was not acquired, nor could it be acquired, by the subject. Rather, it is the very intelligence and rationality of his spirit. It is the cognitive (and volitional) dynamism with which every person is endowed, a dynamism that has an unlimited range and, just for that reason, tends toward a knowledge of everything, i.e., of being. As an intelligent and rational dynamism (or intentionality, in philosophical terminology), it is capable of passing from not knowing to knowing by asking questions solicited by the data of experience: first a question for intelligence, and then a question for reflection. It is only with the answer to this latter question that we succeed in knowing as a reality that which we at first knew only as something given and then, as the result of an act of understanding, as something thought.

4. The Metaphor of the Judge in the Context of Kant's Epistemological and Metaphysical Position

The metaphor of the judge who questions witnesses in order to arrive at knowledge of a legal reality is found in the Preface to the Second Edition of the "Critique of Pure Reason. A pre-face ("Vor-rede") is, in reality, a post-face ("Nach-rede"), i.e., a view of the whole of a work that is now concluded, in which the author tries to highlight the basic idea in what he has written. In the case of Kant's "First Critique," this idea is a reform of the theory of knowledge and the corresponding theory of being (metaphysics), to be worked out on the model of modern natural science, whose validity was evident to Kant because of its successes. The metaphor of the judge is intended to illustrate the characteristic procedure of natural science: The scientist succeeds in knowing (and dominating!) nature by asking it questions. The basic terms of the analogy are, on the one hand, the principles proper to reason that give rise to questions and, on the other hand, the experiment. Modern science is distinguished from ancient science in the Aristotelian tradition precisely by its constant appeal to experience. The problem lies in knowing how these two moments of question and experiment are related to each other. I have already pointed out a tension present in the text of B xiii f, particularly where it says that reason puts into nature that which it must seek in nature and so must learn from it. I now propose to examine the "Critique of Pure Reason" in order to see how Kant actually worked out his epistemology and metaphysics by following the model of the procedures proper to natural science.[7]

According to the important text at the beginning of the "Transcendental Logic," A 50-52, properly human knowledge consists in a binary structure of intuition and concept, where intuition is understood as sense intuition, the only kind with which, according to Kant, man is endowed. The Transcendental Aesthetic is dedicated to the first component of this structure, and the Transcendental Analytic is concerned with the second. With regard to the function performed by sense intuition, let it suffice here

7For a more detailed examination, I refer to my earlier study: "Kants Lehre von der menschlichen Erkenntnis: eine sensualistische Version des Intuitionismus," in *Theologie und Philosophie* 57 (1982) 202-224, 321-347; and "Intentionalität contra Intuition," *ibid*., 59 (1984) 249-264. English version in G. Sala, *Lonergan and Kant. Five Essays on Human Knowledge*, translated by J. Spoerl, University of Toronto Press 1994, 41-101.

to refer to the first two paragraphs of the Aesthetic, A 19 f. This text is extremely important because here Kant clearly formulates not only the role of intuition, but also the role of the concept, and thus presents the core of his theory of knowledge. Sensible intuition is the only cognitive act that is able to throw a bridge from the knowing subject to the reality to be known. But this intuition has its own conditions, the forms of space and time. Consequently, the object is not known as it is in itself, but as it appears to the subject because of these *a priori* forms.

The text also speaks of thought ("Denken"), i.e., of the acts of the understanding ("Verstand"), saying that "Denken" is related directly to intuition, and therefore is related only mediately to the object. "Denken" brings the content of the sensible intuition to the concept, and thereby enables us to have properly human knowledge (cf. A 50-52). But it is not able to go beyond the ontological status of appearance that characterizes the object of intuition. On the contrary, the application of the pure concepts[8] to the content of sensible experience confirms and, so to speak, reinforces the character of what is thus known as being only an appearance. It is precisely the a priori character of concepts that was at the origin of the "Konformitätsproblem" or "antithetisches Problem"[9] that Kant formulated on February 21, 1772 when writing to Marcus Herz, and from which the "Critique of Pure Reason" resulted after years of reflection.

The Transcendental Analytic deals with the function that the understanding with its *a priori* concepts (categories) has in the constitution of human knowledge. The text that is directly dedicated to this problem is the "Transcendental Deduction of the Pure Concepts of Understanding." Now, in the

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8Kant's faculty of reason ("Vernunft"), with its transcendental ideas, is also a part of "Denken." These ideas also are *a priori*, but we can prescind from them here, since they have only a regulative, i.e., systematizing, function with respect to the knowledge of objects that we have already obtained by the joint operation of sense and intellect.

9Hans Vaihinger, "Kommentar zu Kants Kritik der reinen Vernunft," Stuttgart 1891, I 393. The problem comes from two opposing facts. More precisely, it comes from what Kant considered to be a fact, i.e., that we possess *a priori* knowledge of objects (his rationalistic premise), and the fact that we have knowledge of reality (his realist premise).

letter to Herz, Kant had posed the question of the conformity of our *a priori* concepts to the object from a realist point of view. He had asked how these concepts can conform to a reality (and thus enable us to know it) if that reality does not depend on our knowing it. But in the "Critique of Pure Reason" he answers by eliminating the realist premise from which the problem arose.

The outcome of the Transcendental Deduction therefore is that "objects known *a priori* are not objects in themselves, but appearances; they are not independent of us but are regulated by our understanding, which acts as the 'author of the experience' (B 127)."[10] Indeed, Kant writes at the end of the Transcendental Deduction:

> If the objects with which our knowledge has to deal were things in themselves, we could have no *a priori* concepts of them ... But if, on the other hand, we have to deal only with appearances, it is not merely possible, but necessary, that certain a priori concepts should precede empirical knowledge of objects. For since a mere modification of our sensibility can never be met with outside us, the objects, as appearances, constitute an object which is merely in us" (A 128 f, and correspondingly in B 163 f).

With this, the objectivity of the pure concepts (cf. A 85, 93), which Kant thinks he has demonstrated, proves to be in fact a "subjective objectivity."

Obviously this transcendental idealism is the direct result of a thetic interpretation of knowledge. In B xiii f, Kant speaks of a "questioning" and a "seeking" on the part of reason,[11] so that he leaves room for the recognition that the experiment has a real function in the scientist's procedures (and thus in human knowledge). But the final result of the Transcendental Deduction (the heart of the KrV) recognizes only the creative moment of the understanding. It leaves aside the moment of critical reflection on this prior act of understanding (the insight) and thus on the projected, hypothetical explanation of the data. It leaves aside the moment of verification, which in natural science takes the form of an experiment. The absence of this critical and verifying moment is connected with the

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10Vaihinger, "Kommentar zu Kants Kritik der reinen Vernunft," I 394.

11The question, as a question, does not posit anything definitively, but only seeks. The answer to this question posits in the data an intelligible that may be a component of the reality that one is seeking.

tendency in the "Critique of Pure Reason", which Vaihinger also notes, to erase the difference between concept and judgment.[12] This in turn should be seen in connection with the fact that Kant attributes only a regulative function to our cognitive dynamism that tends toward the unconditioned (B xx f). As result, while he indeed speaks of judgment, he does not grasp its defining characteristic, which is the absolute positing (affirmation) of an intelligible.[13] In fact, when we assert in the judgment: "Yes, it is so," we rule out the contradictory assertion.

5. Knowledge of Particular Laws — An Unresolved Problem

The "Transcendental Deduction of the Pure Concepts of the Understanding" explains definitively, at least at first sight, the origin of the laws of nature and, more generally, the intelligible component of human knowledge. The thesis that the subject brings to the "raw material of the sensible impressions" (B 1) the intelligible component of things, which is the "combination" (B 129: "Verbindung") of those impressions, as an "addition" (B 1: "Zusatz"), together with the thesis that "we can know *a priori*[14] of things only what we ourselves put into them" (B xviii), amounts to the thesis that the laws of nature are the product of a legislative activity of the understanding (cf. A 126).

But shortly after repeating this epistemological-metaphysical position, according to which "categories are concepts which prescribe laws *a priori* to appearances, and therefore to nature" (B 163), Kant continues by unexpectedly writing:

12Vaihinger, "Kommentar zu Kants Kritik der reinen Vernunft," I 352.

13For Kant, judgment is conceived as the relation of the subject to a predicate (A 6). But grasping that a certain intelligible predicate possibly belongs to a subject is still part of the moment of understanding, since an insight is always a grasping of connections among data or among concepts. Now, since Kant defines judgment as a relation, he establishes, consequently, a perfect correspondence between the supreme concepts, the categories (A 80) - a concept expresses in fact a relation - and the supreme forms of the judgment (A 70).

14But why must there be *a priori* knowledge? The reason is that, for Kant, any knowledge that is universal and necessary can only be *a priori*. Cf. B 4.

> Pure understanding is not, however, in a position, through mere categories, to prescribe to appearances any *a priori* laws other than those which are involved in a nature in general, that is, in the conformity to law of all appearances in space and time. Special [besondere] laws, as concerning those appearances which are empirically determined, cannot in their specific character be derived from categories, although they are one and all subject to them. To obtain any knowledge whatsoever of these special laws, we must resort to experience (B 165).

How can he so unexpectedly place this restriction on the legislative activity of the understanding, when previously in the Transcendental Deduction not a word has been said about it? The reason is twofold:

First, Kant's profoundly realist attitude, which pushes through again and again in the "Critique of Pure Reason", and because of which he was never able to accept completely the idealism to which the premises of his theory of knowledge logically lead.[15] Second, the experimental character of natural science. If namely the scientist completely prescribes laws to nature, there is no longer a place in his procedures for the experiment. Kant wishes to limit legislation by the understanding to "nature in general" (B 165), "experience in general" (A 125), "pure laws" (A 128), "*a priori* laws" (B 165), "highest laws" (A 126), "original laws" (A 216), "transcendental laws" (ibid.), "principles of pure understanding" (A 148). All of these expressions are burdened with the imprecision of Kant's *a priori* elements of the understanding, especially with regard to the distinction between the *a priori* and the *a posteriori*.

Furthermore, the question arises: What laws is Kant thinking of when, in evident distinction from the "transcendental" laws, he speaks in B 165 of "special laws"? In the parallel passage in A 127 and in the "Prolegomena" (IV 320) these latter laws are even called "empirical laws." Now, the restriction of

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15The "thing in itself ("Ding an sich") plays a fundamental role in Kant: Without it the "Critique of Pure Reason" would be totally incomprehensible. Things in themselves (though unknowable to us!) exist, act on our senses, are manifold, have properties parallel to those of the appearances, etc. A passage in which realism emerges quite clearly is found in A 477-480. Kant distinguishes the domains of knowledge (transcendental philosophy, mathematics, morals) in which no question occurs that we could not answer, "since the object is not to be met with outside the concept," from the domain of "natural science", in which "the natural appearances are objects which are given to us independently of our concepts, and the key to them lies not in us and our pure thinking, but outside us."

the domain of the legislative activity of the understanding that Kant speaks of concerns the formal constitutive component of objects, not their individuality. The reference to sensible experience is enough to explain the latter. The special laws at issue are the various laws of nature, e.g., the laws discovered by Galilei, Torricelli, and Stahl (B xii f), and therefore are universal laws!

Now, for these laws the principle of B 4 holds, which Kant repeats in this context in the following words: "The universal laws of nature can and must be known *a priori* (that is, independently of all experience)" (Prolegomena, IV 319). There is no doubt that the basic tendency of the transcendental philosophy is to say that "every determination of the sensible manifold is deduced from the synthetic functions and from their relation to the unity of apperception."[16]

It cannot escape someone who considers the matter carefully that here Kant not only has restricted the legislative activity of the transcendental subject, but has eliminated it altogether. He observes that a similar problem arises for the "inexhaustible multiplicity of appearances" in relation to the "pure form of sensible intuition" (A 127). But with this observation Kant is far from resolving the difficulty of how universal forms and concepts are explained by recourse to experience. Rather, after he has said that all order, every formal element, is the work of the understanding, he now is recognizing that the same difficulty existed already in the Transcendental Aesthetic, where space and time are *a priori* forms of the sensibility.

At this point Kant's position halfway between realism and idealism breaks down. This has been noted by several authors. Paulsen's observations are particularly instructive. He refers especially to Kant's saying in § 15 that all combination (Verbindung) is an act of the understanding (B 129 f). He then continues: "How is it - unexpectedly - necessary that experience must intervene in order to know special laws? Is it possible to draw from experience laws whose source in our knowledge would not be

16Benno Erdmann, "Kritik der Problemlage in Kants transzendentaler Deduktion der Kategorien," in: *Sitzungsberichte der Konigl. Preußischen Akademie der Wissenschaften*, Berlin 1915, 217.

the understanding? In that case, there would be combinations of appearances according to rules which would derive from the receptivity of sense."[17]

There is no reply in Kant to this objection, which touches the nerve of the entire transcendental philosophy. On the one hand, he asserts that a form can originate only from the subject, while on the other hand he asserts that experience is necessary in order to reach a knowledge of the specific forms that constitute the whole of nature. These two assertions, which contradict each other, are simply placed side by side. In particular, Kant does not explain anywhere how the understanding and the sensibility cooperate in the knowledge of the same reality.

Everything leads us to think that Kant was aware that what he had presented in the Transcendental Deduction of the categories was not really a valid answer to how we come to know the various laws of nature. In fact, he returned to the same problem later and looked for other ways to solve it.[18] Already in the Appendix to the Transcendental Dialectic (A 642-668) under the heading "The Regulative Employment of the Ideas of Pure Reason" we find a first, and different, attempt in connection with the three logical principles of homogeneity, specification, and continuity of forms (A 658). But, since the treatment of the "principle of specification" is really about the systematic ordering of all the empirical laws of nature, the problem of how we come to know these laws and what their ontological status is stays in the background.

The publication of the "Critique of Judgment" in 1790 offered Kant the chance to try again to bridge the gap between "the universal laws without which nature cannot be thought" and the multiplicity of special laws (V 182). Sections IV, V, and VIII of the Introduction touch on this problem. The means that Kant uses here is the "reflective judgment" [reflektierende Urteilskraft: V

17Friedrich Paulsen, *I. Kant. Sein Leben und seine Lehre*, Stuttgart 1898, ^{6}1920, 173.

18A detailed examination of what I can only mention here is found in my article: "Ein experimentum crucis der Transzendentalphilosophie Kants: Die Erkenntnis des Besonderen", in: *Im Ringen um die Wahrheit* (Festschrift für Alma von Stockhausen), Remigius Bäumer u.a. (Hrsg.), Weilheim-Bierbronnen: Gustav-Siewerth-Akademie 1997, 111-126.

179]. Here the "put into" (B xiv) and the "prescribing" (B 159) of the First Critique receive a strange reinterpretation: The reflective judgment looks for special laws "as if [als ob] an understanding (even if not our own) had established them for the benefit of our cognitive faculties, so as to make possible a system of experience according to particular laws of nature" (Introduction., Sect. IV: V 180). The success of this search is due neither to the legislative activity of the understanding (which is limited to "universal" laws) nor to an insight into data that critical reflection would then confirm. It is due to an "incomprehensible lucky fact,"[19] the lucky encounter of an extrascientific hypothesis (the "as if [als ob] of a superhuman understanding) with the scientist's search (cf. V 184).

But it seems that Kant was not satisfied with this solution either, as appears from the repeated attempts in the "Opus Postumum" to find a "transition [Übergang] from the metaphysical principles of natural science to physics" (XXI 174), and thus to achieve "the realization of the transcendental philosophy," as G. Lehmann expressed it in his Introduction to the Academy edition of the "Opus Postumum" (XXII 752). In a series of studies Lehmann has come to the conclusion that the Transcendental Deduction of the categories, and thus the interpretation of the understanding as a legislator over nature, has failed.

P. Plaass also concluded that the attempt to bring the pure part of natural science into agreement with the empirical part "consumed in the 'Opus Postumum' the last of Kant's strength, but without succeeding."[20] Indeed, we have a late confession from Kant himself. Writing to Christian Garve on September 21, 1798 and to Johann Kiesewetter a month later, he recognized that in his search for a transition from the "metaphysical principles of natural science to physics" a gap still remained "in the system of the critical philosophy." (XII 257 and 258)

In his Introduction to the Microfiche-Edition of the "Opus postumum" Reinhard Brandt

19Thus Wilhelm Windelband in his Introduction to the "Critique of Judgment" in the Academy edition" (V 521).

20P. Plaass, *Kants Theorie der Naturwissenschaft*, 126.

emphasizes that Kant's thought in this writing, far from taking stock of his life-long achievement, was still in movement and progress. Though more than 70 years old he dared to break new territory, indeed a new philosophical world-system.[21] In view of the fact, that the problem of a "transition" arose out of the duality, nay disparateness of sense and intellect underlying the "Critique of Pure Reason", and in view of Kant's failure to find the missing link, as the philosopher himself was forced to admit, I cannot but see Brandt's interpretation and glorification of him as a downright "escamotage". In this unfinished work Kant was not at all trying to climb to a new philosophical peak; he rather wanted to find the overdue remedy to his epistemological-metaphysical position in which he had just drawn Rationalism and Empiricism near, without overcoming their shortcomings into a single coherent system that would highlight how sense and intellect collaborate towards human knowing of reality. Kant's "Critique of Pure Reason" represents a moment in the long process, which led at last to distinguish philosophy and natural science, so that natural science itself determines its own basic concepts and principles without borrowing them from a higher science named metaphysics. This does not deny, however, that philosophy could and should reflect upon what the scientist is doing, when he is working as a scientist, in order to bring the scientific method back to the transcendental structure of our cognitive intentionality.

6. Beyond the Impasse[22]

Kant believed he had noticed a gap in the laws of nature between universal and therefore

21Immanuel Kant, *Opus postumum*, Staatsbibliothek zu Berlin - Preußischer Kulturbesitz, Berlin 1999, 11.

22In these concluding reflections I am referring to the volume by Bernard Lonergan, *Insight. A Study of Human Understanding*, London 1957; University of Toronto Press (Collected Works of B.L., 3) [5]1992. An excellent summary of the theory of knowledge presented there is the same author's article "Cognitional Structure," in *Collection* (Collected Works of B.L., 4), 1988, 205-221.

(according to him) *a priori* laws, and special or particular (but still universal!) laws, which he called empirical. But in presenting it he actually spotlighted a basic gap in the "Critique of Pure Reason" itself. It is the gap between the sensibility, which alone - according to the "Critique of Pure Reason" - is able to establish cognitive contact with reality, and the understanding which, though intelligent and rational, is not by itself cognitive. This split between sensibility and understanding led Kant to construct two worlds: a) The real world to which sense has access. But in fact Kant is not prepared to adopt naive realism without reservation; his "real" world has for man the character of a world of appearances, b) The merely thought world of the idealist tradition.

But just as Kant was not prepared to accept naive realism fully, he also was not prepared to accept fully the world of idealism. Consequently, he cut short the logical implications of the two disparate premises (principles) on which the "Critique of Pure Reason" rests when, in his interpretation of experimental science, he was confronted with particular laws. These were no longer conceived as *a priori*, a product of the understanding by means of the so-called transcendental laws. He therefore was forced to set aside the first of his two principles, namely the principle that universality is a "sure criterion of *a priori* knowledge" (B 4). These particular laws were conceived as empirical, since here the sensibility gives a further determination to "the pure laws of understanding" (A 127 f). This contradicts the second principle, namely that sense is never a source of truly universal knowledge (B 3).

To introduce here an "application" of the understanding, with its transcendental laws, to the manifold provided by the sensibility would be to introduce an *ad hoc* solution whose premises are lacking in the "Critique of Pure Reason". If a solution is possible, it must be found at the very start of the inquiry where Kant introduces the "two stems of human knowledge, namely, sensibility and understanding" (A 15). How are these two faculties related to one another? Kant recognizes that "thought" and thus the understanding "must relate ultimately to intuitions" (A 19), and thus to the

sensibility. But this faculty by itself is not able to come into relation with reality; it can only work out what sense provides to it, using categories of its own to which no reality corresponds. From this impasse are derived the two distinct streams of sensist realism and idealism of which I spoke above, and which Kant only later tried to reunite by interrupting their logical course at the stage of the so-called empirical laws of nature. We have seen how Kant struggled with this problem for years, without success.

In my opinion, the impasse can be overcome only by re-examining some of the fundamental premises of the "Critique of Pure Reason".

First, we must recognize that the relation of the knowing subject to reality as something to be known is given not in sense intuition, but in the unlimited intelligent and rational dynamism of the human spirit.

Second, we must recognize that this dynamism is functionally connected to the sensibility,[23] so that it cannot pose its questions for intelligence without referring to the data provided by experience, and it cannot answer the critical question about the correctness of the intelligible grasped in the data except by turning to them again.

Third, and as a conclusion from the two preceding premises, what has been said about the intentional dynamism and the triadic structure of the cognitional process can explain, in a way that is verifiable by introspection, the scientist's procedure that Kant refers to with his metaphor of the judge.

23For St. Thomas Aquinas the human understanding is by its nature "*conversus ad phantasma* [turned toward the phantasm]," i.e., toward the sensibility (*Summa Theologiae*, I, q.84, a.7 with reference to Aristotlés *De anima* III, 7). Thus it appears that the transition between the understanding and the sensibility that Kant vainly searched for, a) is made possible by this constitutive orientation of the human understanding, which is a faculty of a substance composed of spirit and matter, and b) in fact occurs every time we understand something, since our act of understanding is an "*intelligere in sensibili* [understanding in the sensible]" (which Aristotle in the cited place calls "*noein en tois phantasmasi*"). This "*intelligere in sensibili*" serves as a hinge connecting the content of the sensation with the concept produced by the understanding. Every human concept therefore is sensible and intellectual at the same time, since understanding is the act that mediates between the concrete and the abstract, between the singular and the universal.

The scientist asks questions about the data of experience, questions formulated with the intellectual means appropriate for his purpose. The answer to the question for intelligence adds an intelligible element that was not present at the level of the content of the sensibility. In this sense there is a moment that can properly be described as a "putting into." As a result of this putting into, the scientist thinks of a definite reality or event in nature, and the judge thinks of a definite legal fact.

But thinking, planning, projecting, is not yet knowing. Here there intervenes the reflective and critical moment that occurs in all human knowledge of reality and that in natural science takes the specific form of the experiment. Only if the experiment gives a positive result, so that the explanatory hypothesis is confirmed, does the scientist arrive at knowledge of reality.[24] Only then is it possible to say that the intelligible that the understanding has added to the content of the sense experience actually has been discovered in that content, and therefore is a formal component of reality. In Kant, the absence of a clear distinction between the moment of searching for an intelligibility and the moment of truth keeps him from doing justice both to the creative moment of understanding, where he takes as definitive what is only hypothetical, and to the reflective moment, where he makes the experiment superfluous. (If reality is the product of the knowing subject, there is no point in asking about the truth of what the subject has put into the appearance furnished by sense!).

[Translated from the Italian by Donald E. Buzzelli, Washington, DC]

24In this brief description of the experiment I prescind from the correct (!) objection that the experiment, if conceived this way, provides no valid proof. It is namely an invalid form of the simple hypothetical argument: If p, then q; but q; therefore p. Owing to this reason the epistemic status of experiential science is, on principle, that of an hypothesis. But as a matter of fact a scientific hypothesis gets nearer to truth with greater number and variety of experiments that conform to the hypothesis.