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A PREOCCUPATION WITH THE NATURE OF SCIENTIFIC KNOWLEDGE is a thread that runs the entire length of Kant's career. Often this preoccupation expresses itself through Kant's concern for proper methodology, since Kant understands the very idea of what a science is in methodological terms. The mark of a proper science—as opposed to a mere "aggregate" of knowledge—is the requirement that it "be established according to a method." Principally at stake for Kant is the status of metaphysics as a science: this is the central concern of his 1764 "Prize Essay" and likewise the raison d'être of the Critique of Pure

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¹ With some exceptions, references to Kant's works follow the pagination of the German Academy edition (*Gesammelte Schriften*, ed. Königlich Preußischen Akademie der Wissenschaften, later the Deutschen Akademie der Wissenschaften zu Berlin, 29 vols. [Berlin: Walter de Gruyter, 1902–]). Following custom, references to the *Critique of Pure Reason* follow the pagination of the first (A) and second (B) editions. Translations are my own, but I have consulted the commonly used English translations.

Of Kant's first published work (*Gedanken von der wahren Schätzung der lebendigen Kräfte*, 1746), his biographer Ernst Cassirer remarks: "What is noteworthy in this maiden paper is that the first step Kant takes into the realm of natural philosophy immediately turns into an inquiry into its method. His entire critique of the Leibnizian conception is subordinated to this point of view; at one point he expressly explains that he is not so much combating Leibniz's result as its foundation and derivations, 'not actually the facts themselves, but the *modus cogniscendi*"; *Kant's Life and Thought*, trans. James Haden (New Haven: Yale University Press, 1981), 27.

² Logic, §95 (9:139). Kant consistently distinguishes between "method" (Methode, Lehrart), and mere "procedure" (Verfahren). For an example, see Kant's remarks in the Doctrine of Method that aim to distinguish Hume's "censorship" of reason from a true "critique" of reason. Hume's haphazard manner of inquiry is deemed a mere "procedure" (Verfahren, CPR, A760/B788), which Kant consistently distinguishes from method proper (Methode). Kant also distinguishes between "method" and "manner": a manner, like a procedure, yields an aggregate of knowledge and not a system. This comes out particularly clearly in the critical-period Logik Hechsel. "Method is the unity of a

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Reason. As Kant remarks in its Preface, the *Critique* is meant to be a "treatise on the method" of metaphysics.³

It is not my present aim to come to terms with this remark or to trace the evolution of Kant's views on the proper method of metaphysics from 1764 to 1781. My aim instead is to advocate a methodological approach to the *Critique* itself—one that is based on Kant's own conception of what scientific methodology involves. For the *Critique*, Kant insists, is a "whole new science," the "science of an a priori judging reason." If critical philosophy is some kind of science, then Kant's general conception of scientific method should be a legitimate guide to its method.

I will begin with Kant's explicit remarks about the method of the *Critique*, which are found in the *Prolegomena*, and which suggest a powerful connection between that method and the need for a "transcendental deduction" of the categories. In order to understand what that connection might be, I then take a step back and consider Kant's general conception of proper scientific method. This will yield a methodological model to hold up against the text of the *Critique*. But what is the exegetical payoff? What prize awaits us if this methodological approach to the text is sound? As I hope to show, clarification about the method of the *Critique* yields a way of thinking about the role of the Transcendental Deduction in the work as a whole that promises to resolve longstanding debates about the Deduction's internal structure.

whole of cognition according to principles. A unity of cognition can be empirical, . . . in so far as it is in accordance with rules that can be drawn from experience. But there is also unity in accordance with universal principles of reason, where we can produce a thoroughgoing coherence [Zusammenhang], and can produce a system, in which we discover the nature [Art] of the whole through the connection [Verknüpfung] of the manifold. In so far as the unity of cognition rests on empirical rules, it is called manner, in Latin modus. But in so far as the unity of the manifold rests on principles of reason, it is called methodus, method [Lehrart]"; Logik-Vorlesung: Unveröffentliche Nachschriften II, Kant-Forschungen, vol. 9, ed. Tillmann Pinder (Hamburg: Felix Meiner, 1998), 114.

³ CPR, Bxxii. See also A13/B27 and "Erste Einleitung in die Kritik der Urteilskraft" (20:195).

⁴ See *Prolegomena*, Preface (4:261–2), and Kant's letter to Christian Garve (10:340). In the closing passage of the *Critique*, Kant claims that the *Critique* is pure theoretical reason's "scientific and fully illuminating self-knowledge" (A849/B877). See also Axi–xii and Bxxxv–xxxvi for closely related remarks.

I

In the *Prolegomena*, Kant remarks that the method of the *Critique of Pure Reason* is "synthetic." The *Prolegomena* is offered as a popular presentation of the results of the *Critique* that does not submit itself to the same methodological restrictions. Its method is "analytic," and this is supposed to "lighten the task considerably." One conspicuous difference between the two works is the absence of any "transcendental deduction" in the analytic *Prolegomena*. Might it be the case, then, that the need for a transcendental deduction in the *Critique* is closely related to the peculiarities of its method?

We cannot appreciate the function of the Deduction apart from the aim of the *Critique* as a whole. That aim is to address the possibility of a viable metaphysics of nature. True to the spirit of much of the philosophy of the Enlightenment, the *Critique* aims to achieve this end through an examination of our cognitive capacity. Now, the concept of nature does not figure in the main argument of the *Critique* at all until the very end of the Transcendental Deduction: this "deduction" apparently allows for a conclusion about the possibility of nature on the basis of its account of the pure understanding.

The Transcendental Deduction is part of the first book of the Transcendental Analytic, the overall aim of which is to provide an account of the pure understanding as a capacity to judge a priori about objects that can only be given in experience. The Transcendental Analytic begins by announcing that the "pure understanding separates itself not only from everything empirical, but also completely [separates itself] from all sensibility." On this ground, appeal is made to pure general logic—a science that deals with the intellect but abstracts entirely from the content of concepts, and thus from any relation of the understanding to sensibility. It deals only with "the mere form of thought." From the table of the "functions of judgment" borrowed from pure general logic, Kant presents a table of "categories." But their status as genuine concepts, applicable a priori to objects as appearances, hangs in the balance. At this point, they figure as mere "forms of thought."

⁵ Prolegomena, §4, 274–5.

⁶Prolegomena, §5, 279.

⁷CPR, A65/B89; see also A62/B87.

⁸CPR, A54/B78.

 $^{^9}$ They remain "mere forms of thought" until rather late in the Deduction; see $\it{CPR},\,\S24$ (B150).

The Transcendental Deduction is supposed to show that these posited concepts are valid of "whatever objects *may come before our senses.*" It is the "explanation of the way that concepts can relate to objects a priori." It is an argument of legitimation, showing that the "forms of thought" that are first revealed when the understanding is considered in isolation from sensibility are applicable a priori to appearances in general. When this is shown, we entitle ourselves to the idea that these forms of thought are indeed pure concepts, or "categories." From there, we claim that the categories "prescribe laws a priori to nature, as the totality of all appearances." 12

It is striking that the parallel text in the *Prolegomena* argues in the opposite direction: it argues from some concept of nature to the categories as the principles of its possibility. The trajectory of this argument has everything to do with the *Prolegomena*'s analytic method. In the Prolegomena, Kant accounts for the difference between the two methods in terms of what each admits as given starting points. The Prolegomena takes as given certain "actual" bodies of synthetic a priori knowledge; through the analysis of each, it "ascends to the sources"—to the "principle of the possibility"—of what is given. 13 Pure natural science is one such starting point. Thus, the second main section of the *Prolegomena* begins by identifying the conception of nature that is implicit in the idea of a pure natural science: we begin with a "material" conception of nature as the "totality of all objects of experience," from which we derive a "formal" conception of nature as the "necessary conformity to law of all objects of experience." 14 Kant then argues that a certain sort of empirical judgment is proper to the sort of project that a science of nature is supposed to be. From there, Kant concludes that the understanding must be constituted a priori by certain concepts that are to be thought of as conditions of the possibility of experience; the understanding must be conceived in this way, if the judgments of natural science are to be what they purport to be.

Schematically, the argument looks like this: p is not possible without q; p is given; therefore q. Our given, p, stands for something like "pure natural science is a viable cognitive endeavor that is every-

¹⁰ CPR, §26, B159.

¹¹ CPR, A85/B117.

¹² CPR, B163.

¹³ *Prolegomena*, §4, 275.

¹⁴ Prolegomena, §16, 295 and §17, 296.

thing that it purports to be." The argument establishes the necessity of q through an iterated analysis of p. ¹⁵ Our starting point is the conception of nature that is analytically implied by the idea of pure natural science. This starting point ensures that the further analysis that leads us to the claim that the understanding must be constituted a priori by certain pure concepts also leads to the recognition that those pure concepts would necessarily be valid of appearances in general. The argument of the Prolegomena does not require a separate deduction of the categories. Their legitimacy is established by default.

That there is no separate question about the legitimacy of the categories in the analytic *Prolegomena* certainly seems to be part of what lightens the philosophical load. In the *Critique*, the categories come into view for us through pure general logic, and for this very reason their applicability to given objects remains at stake until the end of the Deduction. Has this given us a glimpse into the "synthetic" method of the *Critique*? Yes: for the fact that we begin by separating the pure understanding from everything empirical and from all sensibility means that we will need to "unite" the understanding with sensibility once again, at least as long as we are seeking an account of it as a capacity to judge a priori about objects that can only be given in experience.

¹⁵ Interpreters who suppose that the Transcendental Deduction is an antiskeptical "transcendental argument" take its form to be analytic in this way. Of course, the issue of whether the Deduction is a "transcendental argument" turns on more than mere analyticity; it also has to do with what is admitted as a starting point for the analysis—whether it is some bare conception of selfconsciousness, or a full-blooded conception of experience or empirical knowledge. The "transcendental argument" view of the Deduction (for example, as found in Strawson and his followers) supposes that the Deduction refutes Cartesian skepticism by admitting as given only the minimal premise that one is self-conscious. Stephen Engstrom clearly shows that the Deduction is not offered as a refutation of Cartesian skepticism, and hence is not an example of a "transcendental argument" in this sense ("The Transcendental Deduction and Skepticism," Journal of the History of Philosophy 32 [1994]: 359-80). For other arguments against taking the Deduction to be a "transcendental argument" in Strawsonian terms, see Karl Ameriks, "The Transcendental Deduction as a Regressive Argument," Kant-Studien 19 (1978): 273-87; and Manfred Baum, "Transcendental Proofs in the Critique of Pure Reason, in Transcendental Arguments and Science: Essays in Epistemology, Synthese Library: Studies in Logic, Methodology, and Philosophy of Science, vol. 133, ed. Peter Bieri, Rolf-Peter Horstmann, and Lorenz Krüger (Dordrecht: D. Reidel, 1979).

But why this arduous method? Would we be so impoverished if we had only the analytic *Prolegomena* on our shelves, and not the synthetic Critique? The simplest answer that Kant would give turns on the idea that reason must come to complete self-knowledge, and that it is only the synthetic Critique that can carry this out. The Prolegomena, apparently, does not yield a satisfying form of reason's selfknowledge. In its Preface, Kant suggests that it is only the Critique which "presents the faculty of reason in its whole extent and bounds," something that the mere "preparatory exercises" of the *Prolegomena* are in no position to do. 16 Why? After all, the *Prolegomena* seems to be concerned with the same things that the Critique is: we learn about space and time as "pure forms of intuition," we learn about the "categories" and the "principles of the pure understanding," and we learn about the "ideas" of reason. The separate analyses of the Prolegomena correspond roughly to the Critique's Transcendental Aesthetic, Transcendental Analytic, and Transcendental Dialectic. What does the Critique give us that the Prolegomena cannot—or, at any rate, does not?

Kant would reply that the *Critique* gives us a "science." This is required because the problem at hand is, at least in some sense, foundational: we need to establish the scientific viability of any future metaphysics. ¹⁷ Kant thinks that only a genuine science, the insights of which rest on the discovery of a rational principle, could provide the sort of completeness in its results that would be necessary for this foundational project to be achieved. ¹⁸ But still this sort of response must grate upon contemporary ears, because it is precisely Kant's var-

¹⁶ Prolegomena, 261. In the Prolegomena, Kant expresses the hope that its gentler pastures will kindle a longing in the reader to head down the critical path. "I can already imagine beforehand that everyone whom I have led down the thorny paths of the Critique, and whom I have made weary and indignant, will ask me on what indeed I ground this hope. I answer: upon the unavoidable law of necessity" (Prolegomena, 367). Kant says that his hope is founded upon some sort of necessity, which presumably has to do with the nature of reason. Reason cannot remain as it is, in its unsatisfied state of internal conflict. It cannot stay this way because of its reflective character, and its drive for complete, harmonious determination of all things—including itself.

¹⁷ In the Preface, Kant draws our attention to the problem of the possible scientific status of metaphysics; in the Introduction, the problem at hand is generalized and reformulated as the problem about the possibility of synthetic a priori judging.

ious claims for the scientific character of his project—especially regarding the completeness of his results—that sound so quaintly ludicrous to us now.

But perhaps we could begin to take this idea seriously from an exegetical perspective: the *Critique* possesses a certain unity in its exposition that the *Prolegomena* lacks. The careful reader of the *Prolegomena* soon recognizes that the individual analyses that make up that work—the analysis of pure mathematics, then pure natural science, and even the analysis of the hitherto failed enterprise of metaphysics—are not really independent of one another at all. And yet there is no explicit account of how the three analyses relate to one another. ¹⁹ The *Prolegomena* lacks a unifying principle: as we will see, the role of just such a principle in the *Critique* is precisely what would make it a "science" in Kant's view.

A proper science, Kant claims, is a "whole of cognition as a system" that is "established according to a principle."²⁰ The *Prolegomena* is not a science, because it lacks a principle that could establish the unity of the results of its three analyses. In the *Critique*, this principle is known as the "principle of the synthetic unity of apperception." It is revealed in the Transcendental Deduction, where it is also put to work in establishing a unified account of our capacity to judge a priori about objects that can only be given in experience. This makes it the highest principle of "pure theoretical reason." Now, this principle is

 $^{^{18}\,\}mathrm{For}$ consideration of this point in relation to one aspect of the Critique (the derivation of the table of categories), see A67/B92 and A80–1/B106–7.

¹⁹ For example, the first analysis in the *Prolegomena* reveals space and time as pure forms of intuition—"principles of the possibility" of pure mathematics. In the second analysis, which takes pure natural science as given and reveals the pure concepts of the understanding, we suddenly learn that these pure concepts are also required for a science of pure mathematics (at the end of §20). In other words, what was elucidated apparently independently in the first analysis-without any mention of the pure concepts of the understanding-turns out to require the concepts that only come into view in the second analysis. Similarly, it is only when we get to the third analysis that we discover that the operative conception of nature in the second analysis—that is, nature as the "totality of all objects of experience" (§16, 295)—has its source in reason. The "absolute whole of all possible experience," Kant tells us, "is not itself an experience but is a necessary problem of reason" (§40, 328). The three analyses are clearly not independent of one another; at the same time, there is no clear account of their relation to one another. We are lacking a unifying principle.

merely mentioned (not discovered, and not employed) in the analytic *Prolegomena*.²¹ Hence the *Prolegomena* is not a science, but at best a mere report (which is laid out in analytic form) of the results of the *Critique*'s "science of an a priori judging reason."

For Kant, then, the *Critique*'s synthetic method is the source of its status as "scientific and fully illuminating self-knowledge." To understand this method better, I will turn now to the topic of Kant's general conception of scientific cognition.

II

Kant claims that scientific cognition begins with an "idea of the whole": apparently, we start out with an indeterminate grasp of the very subject matter of which the science itself will provide the determinate account. An emphatic, if not particularly clear, statement of this idea can be found in a passage from the Appendix to the Transcendental Dialectic. Although this passage specifically concerns the proper role of reason with respect to empirical cognition, its main point holds of scientific cognition in general.

If we survey the cognitions of our understanding in their entire range, we find that what reason quite uniquely prescribes and seeks to bring about concerning them is the *systematic* of cognition, that is, its *interconnection from a principle*. This rational unity always presupposes an idea, namely that of the form of a whole of cognition, which precedes the determinate cognition of the parts, and contains the conditions for determining a priori the place of each part and its relation to the others.²²

One can find a very similar passage in the Doctrine of Method, which tells us that a science begins with a "rational concept" that "contains the end and the form of the whole." According to that passage, a science is a "whole" of cognition that is "articulated and not heaped up; it can grow internally . . . but not externally, like an animal body whose growth does not add limbs but rather makes each limb stronger and fitter for its end without altering the proportion."

²¹ See Prolegomena, §36, 318.

²² CPR, A645/B673. My emphasis.

²³ CPR, A833/B861.

The curious proposal here is that scientific cognition begins with an idea of the whole and moves to a determinate grasp of the parts. What makes for a determinate grasp of the parts is apparently some kind of appreciation of their relation to one another, and their contribution to the end of the whole. This need not imply that there can be no role for an "indeterminate" account of the parts or elements of a science. An indeterminate account of these elements would simply not address their relation to one another, nor would it explain how they contribute to the end of the whole. As I will suggest later on, the account of sensibility in the *Critique*'s Transcendental Aesthetic, as well as the account of the understanding in the initial stages of its Transcendental Analytic, are "indeterminate" in this sense.

Let us recapitulate these remarks about scientific cognition. Kant claims that scientific inquiry begins with an idea of the "whole": presumably, this refers to the very subject matter regarding which the science will go on to give the determinate account. Now, Kant says that this idea of the whole contains the conditions for the determinate cognition of the parts, suggesting that it may be through some kind of analysis of the idea of the whole that we arrive at the conditions through which the determinate cognition of the parts is possible. Finally, it seems that the conditions for the determinate cognition of the parts are called principles.

Now, in what sense are the projects of inquiry that we today most comfortably think of as "sciences" accounted for by this general model? The method just sketched seems to be a method of exposition rather than a method of discovery. And the demonstration of the unity of a body of knowledge—the exposition—typically follows a stage of discovery. Lamenting this a bit, Kant writes: "It is unfortunate that only after we have spent much time collecting cognitions, as building materials, in a rhapsodic way at the suggestion of an idea lying hidden in our minds, and indeed after we have, over a long period of time, assembled them in a technical manner, does it first become possible for us to discern the idea in a clear light and draw up a whole architectonically according to the ends of reason."²⁴ Clearly Kant is not supposing that his general model of scientific exposition pertains to the order of discovery in empirical natural science.²⁵

²⁴ CPR, A834-5/B862-3.

²⁵ The method of exposition, I take it, is concerned to give a clear account of the domain of inquiry. Critical philosophy is the "science of science," because its principles (the principles of the pure understanding) are supposed to determine what it is to figure in the domain of nature *at all*. Thus it offers an account of the domain of all theoretical (as opposed to practical) inquiry.

Furthermore, there are certain modes of inquiry that could never, at least in Kant's book, achieve the kind of systematic expression that is the mark of a proper science. Why not? The answer has to do with the kind of principles employed. In the broadest sense, a "principle" is any universal proposition from which further claims can be established; thus, even an empirical generalization can be a "principle" in this sense.²⁶ But such a principle, or even a set of them, cannot be the basis of a proper science, according to Kant. What are sometimes called the "human sciences" could never figure as proper sciences on Kant's view, for the simple reason that they cannot contain rational principles. Take art history as an example: there may well be propositions which function as "principles" for art historians, that is, propositions on the basis of which they are able to give a unified account of the practice (say) of painting. These could be propositions about style or the constraints of the medium, or even general determinations about the influence of economic and social conditions on the development of the practice. But in this sort of case, the character and development of the practice itself is prior to the theoretical apparatus that accounts for it. We might consider a more specific example, this time from second-rate theorizing about couture: the proposition that "hemlines rise in good economic times" conceivably allows one both to account for given sartorial phenomena, as well as to anticipate future sartorial phenomena. In this sense, it is a principle. But again, "principles" like this one shift with the development of the practice itself. (After all, there may well come a time when hemlines fall when the markets are up.)

The upshot is that we could never expect to give an exhaustive account of the principles involved in the so-called human sciences. And Kant thinks that it must be possible to give an exhaustive account of the fundamental principles involved in any cognitive enterprise that merits the title of "science." Proper scientific cognition rests on rational principles. A rational principle is prior to the elements of the system. The principles of the pure understanding, which Kant supposes are the foundation of the laws of physics, determine what it is to figure in the domain of nature at all. Thus, what figures as an element in a system of a priori rational cognition (for example, a particular rule or law), as well as any datum that can be cognitively accommodated

²⁶ CPR, A300/B356.

by that system (for example, an object of possible experience), owes that status to the principle or set of principles that express the "form of the whole" of the science in question.

Scientific cognition must arise from a certain kind of principle, a "rational" one. But how do we get this sort of principle? It is not helpful to say that "it comes from reason." We are now facing the real methodological question: how does all of this work? Kant's conception of a science as a whole of cognition that is established according to a method, on the basis of rational principles, suggests that there may be two aspects of scientific method. For one thing, we will need to arrive at these principles in some methodologically sound way. For another, it seems that we must order or establish the science according to these principles once we find them. These aspects are called analysis and synthesis by Kant in his logic lectures. Analysis, he says, "begins with the conditioned and grounded, and proceeds to principles."²⁷

Analysis figures in the work of a science proper as the path to the first (or highest) principle of the science. But the end of scientific inquiry is systematic knowledge, and it is not evident that analysis alone can give us this. Analysis leads us to the principles, and hence to the elements, of the subject matter; but it does not account for their unity. In the Preface to the Critique of Practical Reason, Kant distinguishes between these two stages of inquiry when what is at stake is the "determination of a particular faculty of the human soul." The analysis yields a provisional grasp of the "parts" of the faculty in question. Following the analysis is a task that is both "more philosophical and architectonic: namely, to grasp the idea of the whole correctly and from this to see all those parts in their reciprocal relation to one another by means of their derivation from the concept of that whole in a pure rational faculty." This is the "synthetic" stage of inquiry, which is supposed to afford some kind of "examination and guarantee" of the preliminary results of the analysis.²⁸

Before we could appreciate how this would work, we would need to clarify our conception of what a principle is. For the *Critique*, at any rate, seems to deal in at least two different kinds of "principle." The bulk of the *Critique*—everything except the Prefaces, the Introduction, and the Doctrine of Method—is called the "Doctrine of

²⁷Logic, §117, 9:149.

²⁸ Critique of Practical Reason 5:10.

Elements." This divides into a Transcendental Aesthetic and a Transcendental Logic, suggesting that the "elements" in question are sensibility and the intellect (broadly construed). There are principles expressing the nature of each of these elements. Space and time, as pure forms of intuition, are "principles" in this sense. So are the "principles of the pure understanding," which are developed from the categories. At the same time, the general account of scientific method that Kant expounds in his logic lectures suggests that there must be another sort of principle in play: the principle on the basis of which the relation of these elements to one another can be established. This sort of principle would count as the "first" or "highest" principle of a science. The elements of the critical science would have that status insofar as they are united, or ordered, by means of such a principle.

In order to understand how this general conception of scientific inquiry might actually play out, we need to be particularly clear about our starting points. An analysis of any kind is intelligible only with respect to its starting point; hence, if we want to track the analyses in the *Critique*, we need to be clear about where the work begins. Kant is not as clear about his starting point in the *Critique* as he is, say, in the *Groundwork*. The first two parts of the *Groundwork* contain an analytic ascent to the categorical imperative from the starting point of "ordinary moral rational cognition." The categorical imperative is not a principle of abstruse metaphysical navel-gazing; it is in play, tacitly, in ordinary moral life. Whatever doubts we might have about the analysis that follows, its starting point (the idea of a "good will") is clearly announced.

Our top priority, if we want to understand the method of the *Critique*, should be to determine what its starting point is. Any analytic argument in the *Critique* will presumably follow from that starting point; and we will not be able to track the line of analysis if we are not clear about what that starting point is. The analysis is supposed to lead us to a highest principle on the basis of which the systematic unity of the investigation can be established. Early on in the *Critique*, Kant remarks that any analysis carried out in its pages must be "purposeful" (*zweckmäßig*), which Kant says means that it would be carried out for the sake of making a certain synthesis possible. This synthesis, he remarks, is that "for the sake of which the entire *Critique* actually exists." The importance of this remark will become evident later on. For now, we should simply hold onto the idea that analysis

and synthesis are complements in scientific investigation: the analysis is carried out for the sake of the ensuing synthesis, and it is in virtue of this synthesis that the investigation becomes a science.

Thus, in order to understand fully the synthetic method of the *Critique*, we would need to address the following questions:

- (1) What is the starting point of the Critique?
- (2) What are the "elements" of this science?
- (3) What is the first principle of this science, and where is the analysis that uncovers it?
- (4) What is the "synthesis"?

In the following, I will only be able to give detailed responses to questions (1) and (2). These first two questions pertain to the overarching methodological framework of the *Critique*. However, careful consideration of these two questions will yield conclusions about the methodological role of the Transcendental Deduction in the *Critique* as a whole. These conclusions will in turn suggest preliminary answers to questions (3) and (4)—which, as it turns out, pertain to the internal structure of the Transcendental Deduction. In short, if we can clarify the *Critique*'s general methodology by answering the first two questions here, then we should find ourselves in a better position to resolve existing debates about the Deduction's internal structure.

III

Let us begin with the surprisingly vexed issue of the *Critique*'s starting points. What does it take as given? It is tempting to point to the remark at the beginning of the Introduction—where Kant nods to the empiricists, proclaiming "there can be no doubt that all of our knowledge begins with experience" and to conclude that the starting point of *Critique* itself must be experience. Some influential commentators have supposed that this is the case. After all, in a letter to

²⁹ CPR, A14/B28.

³⁰ CPR, B1.

³¹ This is a pervasive feature of Patricia Kitcher's work on Kant, from *Kant's Transcendental Psychology* (Oxford: Oxford University Press, 1990) to more recent work—see "The Presupposition of Kant's Transcendental Deduction" (paper delivered at the Fourth Athens–Pittsburgh Symposium, Delphi, Greece, June 2003).

J. S. Beck, Kant himself characterizes an unspecified stretch of the *Critique* as an "analysis of experience in general [*Erfahrung überhaupt*]." But this should indicate that the *Critique* does *not* begin with an empirical premise: the *überhaupt*-formulation tells us that it is not any particular experience, or even any particular collection of them, that is our starting point, but rather some idea of "experience as such." It should go without saying that it is far from clear what this is supposed to mean.

There are three candidate "answers" to the question about the *Critique*'s starting points. I will argue here that they come down to three different ways of saying the same thing. The first candidate is "experience in general"; I will return to it after considering the other two. The second candidate comes attached to the idea that the method is synthetic. While the analytic *Prolegomena* takes as given particular systematic expressions of rational activity (particular sciences, or putative sciences), the *Critique* claims to admit only reason itself. Its starting point is the faculty of reason, rather than any expression of its actuality. I quote the passage now in full:

In the *Critique of Pure Reason* I intentionally went to work on this question [about the possibility of metaphysics] *synthetically*, namely in such a way that I investigated into pure reason itself and in this very source sought to determine the elements as well as the laws of its pure employment according to principles. This work is difficult and requires a resolute reader to think his way gradually into a system which lays nothing as given for its basis except reason itself, and thus, without resting on any other fact [Faktum] seeks to develop the cognition from its original germs.³³

So Kant says. But when we turn to the text of the *Critique* itself, we find no clear indication of how to understand this, apart from the idea

^{32 20} January 1792 (11:313).

³³ Prolegomena, §4, 274. In the Doctrine of Method, Kant contrasts the genuine criticism of reason with Hume's "censorship" of reason. Hume's project "subject[s] the facta of reason to examination [Prüfung] and, when necessary, to blame" (CPR, A760/B788). The "facta" in question are presumably particular claims of reason. The Humean project of censorship is contrasted with critical philosophy, "which subjects to evaluation [Schätzung] not the facta of reason but reason itself, as concerns its entire faculty and suitability for pure a priori cognitions" (CPR, A761/B789). In the passage from the Prolegomena, Kant says that the Critique takes as given nothing except the "fact [Factum]" of reason itself. This means, I take it, that the only starting point is the faculty of reason; the Critique does not admit as given any particular actualization of reason's capacity.

that the *Critique* is reason's self-investigation. This characterization of the project is so general that it offers little concrete guidance for getting our bearings in the text.

Moreover, when it comes time to specify what our starting point is supposed to be, Kant does not seem to point to reason. Instead, at the end of the *Critique*'s Introduction—just as we are about to embark on the work proper, the Doctrine of Elements—Kant says that the only "preliminary" is his characteristic thesis about the heterogeneity of sensibility and understanding.

All that seems necessary for an introduction or preliminary is that there are two stems of human cognition, which perhaps arise from a common, but to us unknown, root—namely, sensibility and understanding. Through the first objects are *given* to us, while through the second they are *thought*. To the extent that sensibility may contain a priori representations, which constitute the condition under which objects may be given to us, it would belong to transcendental philosophy.³⁴

So we have a third candidate starting point: the thesis about the heterogeneity of sensibility and understanding, the former a capacity to represent objects insofar as they can be given, and the latter a capacity to represent them insofar as they can be thought. I shall refer to this as the "heterogeneity thesis."

On the face of it, the heterogeneity thesis is not a controversial starting point. Nearly any philosopher, with the possible exception of a Platonist committed to disparaging the cognitive value of sensory representations altogether, would be prepared to give some lip service to the idea that sensibility and understanding contribute in distinct ways to knowledge. In this passage, however, Kant suggests a further ramification of the view that clearly is controversial. For it seems that if this thesis is to serve as the starting point of critical philosophy, then it entails not only that sensibility and understanding contribute in distinct ways to our cognition, but also that each capacity is constituted by certain a priori representations. At any rate, this is the condition under which sensibility would figure in "transcendental philosophy," as Kant says in the passage above. If the heterogeneity thesis entails this much, even as a mere "preliminary," it is much more radical than any garden-variety empiricist or rationalist would be prepared to accept. The rationalist digs in his heels with the idea that sensibility is

³⁴ CPR, A15/B29-30.

constituted a priori, while the empiricist would dispute that either capacity could be constituted a priori.

Furthermore, this preliminary thesis shapes everything that follows. We suppose the heterogeneity thesis at the outset, it seemsand with it, the more radical implication that sensibility and (presumably) the understanding "contain" a priori representations. So, when we turn the page, and begin the Transcendental Aesthetic, we set out to give an account of sensibility that presupposes the possibility of "isolating" it both from "what the understanding thinks through its concepts," as well as from "everything that belongs to sensation." This is to leave us with the a priori representations that we suppose sensibility must "contain"—that is, nothing but "pure intuition and the mere form of appearances."35 As we have already seen, Kant makes a similar move at the outset of the Transcendental Analytic, announcing that the pure understanding "separates itself" from "everything empirical" and from "all sensibility." Hence, the heterogeneity thesis seems to underwrite a methodological strategy, which I shall call the "strategy of isolation."

The heterogeneity thesis says that the elements are irreducible to one another, and this irreducibility is cashed out in terms of the idea that each capacity is characterized by a distinct mode of representation (sensibility by intuitions, understanding by concepts). This idea of a "mode of representation" pertains to the distinct expression of each capacity. Is there not something ambiguous about the notion of "representation" in this story? For Kant takes a further step beyond the mere idea that each element is distinguished by its mode of representing: he supposes, as part of the heterogeneity thesis, that each element "contains" a priori representations that are constitutive of its capacity.

The hidden presupposition here, it seems, can be traced back to the B-edition Preface, where Kant puts forward a new model for conceiving of the possibility of a priori cognition. It is an "altered method of our way of thinking, namely, that we cognize of things a priori only what we ourselves have put into them." We cannot conceive of the possibility of a priori cognition, Kant argues, if we suppose that our cognition must conform to its objects. So a new explanatory model is

³⁵ CPR, A22/B36.

³⁶ CPR, Bxviii.

admitted: we are to conceive of the possibility of a priori cognition in terms of the idea that our cognitive capacity makes some necessary contribution to cognition.

This contribution can only be an anticipation of what can be cognized at all. The contribution would have to be independent of any particular occasion of the exercise of these capacities; in other words, this contribution would not be generated as a mere response to the world. This seems to lead Kant to the idea that we can conceive of this contribution in terms of certain a priori representations that distinguish each capacity.

When each capacity is considered in isolation from the other and from everything empirical, we discover the a priori representations that are constitutive of the capacity. For Kant, this means that we can give an exhaustive account of each capacity in terms of these representations (although he is not explicit about why this follows, and it is not clear that it does). At any rate, the point is made emphatically at the outset of the Transcendental Analytic: the table of the pure, elementary concepts of the understanding must "fully exhaust the entire field of the pure understanding."37 The categories exhaust the capacity of the understanding in the sense that any particular empirical concept (Erfahrungsbegriff) is simply a pure concept of the understanding considered *in concreto*; they are "forms" of concepts in general.³⁸ Likewise, the pure forms of intuition exhaust the capacity of sensibility, at least in the sense that anything that can figure as a sensible representation must "stand under" these forms: no singular representation can register in our consciousness if it is not given in space or time.³⁹ Thus, Kant's heterogeneity thesis says not only that sensibility and understanding make distinct contributions to knowledge, but also that each "contains" a priori representations that are constitutive of its capacity.

Yet this "preliminary" for Kant's entire investigation is something that neither an empiricist nor a rationalist could accept. On what

³⁷ CPR, A64/B89.

³⁸ CPR, A567/B595.

³⁹ For one clear statement of this, see Kant's reminder in the Deduction about the principal result of the Aesthetic: "The highest principle of the possibility of all intuition in relation to sensibility was, according to the Transcendental Aesthetic, that all the manifold of sensibility stand under the formal conditions of space and time" (*CPR*, §17, B136).

basis can it be invoked as a preliminary, rather than as a conclusion? We can address this question by considering the relation of the heterogeneity thesis to the other main candidate for the Critique's starting point: "reason itself." Presumably, Kant says that the Critique takes nothing as given except reason itself because it is supposed to be reason's project of self-knowledge. But this oversimplifies matters: it is reason's examination of its theoretical capacity. Kant begins in the B Preface by considering successful cases of scientific cognition and the failure of metaphysics to attain the "sure path" of a science. The problem of metaphysics is reformulated in the Introduction as the problem about the possibility of judging a priori about objects that can only be given in experience. Kant understands this as the problem about the possibility of synthetic a priori judging, which he then dubs the "general problem of pure reason."40 At stake is the viability of judging that claims both apodictic necessity and objective validity. In these passages, Kant claims that the only resolution to such a problem is for reason to examine its own capacity. For the claims of reason are at stake—and, as Kant says elsewhere, reason "recognizes no other judge than human reason itself."41 The passages leading up to the presentation of the heterogeneity thesis as the starting point set out the framework of the project as reason's examination of its theoretical capacity.⁴²

No doubt, the argument leading to the presentation of the heterogeneity thesis is somewhat suppressed. But the line it takes must be something like the following. If cognition of objects is possible a priori, then it must be independent of any particular occasion of objects appearing before the senses. Yet if the critical science is to account for the possibility of a priori cognition of objects (phenomena), then it must rely on the existence of a priori conditions of the possibility of objects appearing before the senses. This is why Kant admits the heterogeneity thesis as a "preliminary," underscoring the idea that sensibility must "contain" a priori representations if it is to figure in this science at all.

The heterogeneity thesis figures as a "preliminary" under the proviso that we accept Kant's description of the general problem of pure

⁴⁰ *CPR*, §6, B19.

⁴¹ CPR, A752/B780; see also *Prolegomena*, 263.

⁴² CPR, A14–5/B28–9; see also Bx.

reason and his prescription for its resolution.⁴³ There is no real tension between the idea that the Critique takes nothing as given except reason itself, and the idea that its only preliminary is the heterogeneity thesis. Reason is investigating itself as a capacity for a priori theoretical cognition. It does so by inquiring about the possibility of judging synthetically and a priori. What distinguishes synthetic a priori judging from analytic (a priori) judging is that it concerns empirical objects, rather than the content of concepts. Supposing that it is possible to judge in this way, then some receptive capacity must be part of this faculty for a priori judging. As such, it would have to be constituted by its "own" a priori representations if it is to be genuinely distinct from the capacity for thought, and yet part of an "a priori judging reason." So if this is how pure theoretical reason investigates its own capacity, then sensibility and understanding are, in this respect, "elements" of it. They are not derived from reason—reason is not the "unknown root"-but rather, they are part of reason only insofar as they are unified by it, as we shall see.44

Thus, the heterogeneity thesis falls out of the idea of the project itself, as pure theoretical reason investigating its own capacity. This is also, I think, another way of saying that the starting point is "experience in general," or *Erfahrung überhaupt*—the first candidate for the *Critique*'s starting point. Kant's *überhaupt*-formulation tells us that we are dealing with an idea of reason: that is, not any particular experience or finite set of exeriences, but something like the sum total of them. Of course, we can only grasp this modally, in terms of a priori conditions for the possibility of experience. Bearing in mind that Kant takes experience to be "empirical knowledge," the compatibility of this candidate starting point with the other two should be clear.

 $^{^{43}}$ In the Doctrine of Method, Kant suggests that the starting point of critical philosophy is the "nature of synthetic a priori propositions" (*CPR*, A762/B790).

⁴⁴ I take it that the heterogeneity thesis would be compromised if we could indicate what this "unknown root" is.

⁴⁵ CPR, B146; B165–6; B234; see also B1 and B128.

What does the heterogeneity thesis, and with it the strategy of isolation, tell us about the Critique's synthetic method? To answer this, consider Kant's reminder of the heterogeneity thesis at the outset of the Transcendental Logic. Each capacity, he says, is characterized by a distinct mode of representation—sensibility by intuitions, and understanding by concepts—which are the "elements of all our cogni-Knowledge requires both: "Thoughts without content are empty, intuitions without concepts are blind."46 Thinking is a source of knowledge only to the extent that it is applicable to what can present itself to us in sensibility, our capacity to enjoy given representations. Intuition is a source of knowledge only insofar as it can be brought under concepts. As cognitive faculties, sensibility and understanding are fundamentally distinct: the form of representation that characterizes the one can never be reduced to the form of representation that characterizes the other. At the same time, they are necessarily unified: "These two faculties or capabilities can never exchange their functions. The understanding can intuit nothing, and the senses can think nothing. Only through their unification can cognition arise."47 This thesis about the unity of sensibility and understanding complements the heterogeneity thesis; I shall call it the "cooperation thesis."

When we begin the Transcendental Deduction, we have in place a preliminary account of sensibility as constituted by two "forms of intuition," and a preliminary account of the understanding as constituted by twelve "forms of thought." But merely pointing to the a priori "forms" of representation that are constitutive of sensibility and understanding respectively is not enough to entitle us to a conception of these as elements of a capacity for a priori knowledge of nature. Their status as cognitive capacities hangs in the balance: the cooperation thesis tells us this. Thus, the strategy of isolation must be complemented by an argument that, in effect, brings these elements together. This is why the method is "synthetic," and this is why the Deduction is the pivot on which everything else in transcendental philosophy turns.⁴⁸

⁴⁶ CPR, A50-1/B74-5.

⁴⁷ CPR, A51/B75–6.

V

Our general model of scientific method involves analysis and synthesis as complements. So far our account of the synthetic character of the *Critique*'s argument has focused on the need to combine sensibility and understanding as elements of pure theoretical reason. Where is the analysis and where is the synthesis that the methodological model tells us we should expect?

Kant conceives of the *Critique* as reason's scientific examination of its own capacity. On the basis of Kant's remarks about methodology, we should expect to find some preliminary conception of reason as the "idea of the whole" from which we would begin. This preliminary conception comes to light in the Preface and Introduction, which are both concerned with the nature of rational cognition. The topic of the B Preface, after all, is rational cognition that "takes the sure path of a science." What better way to adumbrate a preliminary conception of theoretical reason than by considering its paradigmatic activity (scientific cognition)? There isn't time to examine Kant's remarks about scientific demonstration in the B Preface, and, at any rate, those remarks are more suggestive than conclusive. Yet this, at least, should be clear: Kant begins with a general account of rational cognition in the B Preface which puts forward an idea of the "whole," which is pure theoretical reason as a source of scientific cognition. In the Introduction, Kant clarifies this idea of the whole when he introduces the problem about the possibility of synthetic a priori judging, which he presents under the heading of the "general problem of pure reason."

But what follows when we embark upon the main text of the *Critique*—the Doctrine of Elements—are separate accounts of sensibility

⁴⁸ Dieter Henrich remarks that the argument of the Deduction is "synthetic" for something like this reason: the Deduction "proceeds on the basis of the fact that the two doctrines of the *Critique* are initially developed independently of one another—the doctrine of the categories as functions of unity in self-consciousness and the doctrine of space and time as given representations"; "The Proof Structure of the Transcendental Deduction," *Review of Metaphysics* 22 (1969): 649. He continues: "Within the structure which Kant had already given his book, the advantages of a construction according to the synthetic method were in any case obvious. This construction allowed him to ground the two fundamental positions of critical philosophy, the sensible a priori and the active role of the understanding in knowledge, separately—and unite them by means of a single argument" (650).

and understanding, each considered in "isolation" or "separation" from the other. I have argued above that the strategy of isolation on its own cannot yield an account of either element as a cognitive capacity. As long as we labor under the strategy of isolation, we have only an "indeterminate" account of these elements because we still lack the principle that would determine their relation to one another in their contribution to the end of the whole. This means that we have no basis to claim that the characteristic representations that we take to be constitutive of each element are "objectively valid." We still have no basis to claim that these representations put us on to objects.

This gives us another way to think about the justificatory task of the Deduction: the Deduction aims to establish that the elements in question are indeed cognitive capacities. Kant's general conception of scientific method gives us some idea of how this should work. We want a determinate account of the elements (sensibility and understanding) on the basis of a rational principle. This means that the account of each element will be complete only once we reveal this principle and employ it to ascertain the relation of each element to one another insofar as they contribute to the end of the whole. Given the way Kant sets things up in the Preface and Introduction, that "end" seems to be scientific knowledge of material nature (be it physical or metaphysical).

As we have already seen, Kant's general model of scientific method involves two parts: analysis and synthesis. Thus, it seems to apply quite directly to the Transcendental Deduction chapter. After all, Kant divides this chapter into two parts with a signpost: about halfway through, Kant tells his weary reader that "a beginning [Anfang] of a deduction of the pure concepts of the understanding has been made." It has, moreover, just been made—"in the above proposition [obigen Satz]." Halfway through a text of punishing difficulty, we suddenly learn that we are just getting started.

Many commentators have remarked on the Deduction's two-part structure, but there is little agreement among those commentators about what is going on in each of the two parts, and how they relate to one another. The general account of the *Critique*'s method that I have offered prepares us to understand why the Deduction has two parts. The strategy of isolation leaves us with two separate and there-

⁴⁹ CPR, B144.

fore preliminary accounts of the elements, sensibility and understanding.⁵⁰ We still need the rational principle that will allow us to unify them into the account of a single cognitive capacity.

That principle is the principle of the synthetic unity of apperception: it pertains to—even expresses—the reflective or self-conscious nature of reason. We uncover and establish this principle in the first half of the Transcendental Deduction. What follows that is the deduction argument in the strict sense: this is the "synthetic" account of the relation of sensibility and understanding insofar as each is capable of contributing to scientific knowledge of material nature. It is only when we have this principle in view, and employ this principle to establish the relation of these elements to one another, that our account of the elements can be complete and determinate. To see whether and how this succeeds, we would need to examine the details of the Deduction. That is work for another day. I simply hope to have made a compelling case for the potential exegetical payoff of taking seriously Kant's own conception of the *Critique* as a science of pure reason. ⁵¹

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⁵⁰ My claim about the provisional status of the account of sensibility in the Transcendental Aesthetic is rather more controversial than the parallel claim about the provisional status of the account of the pure understanding in the initial stages of the Transcendental Analytic. At this point, my claim about the provisional status of the separate accounts of sensibility and understanding rests largely on Kant's heterogeneity and cooperation theses. I offer an account of the provisionality of the Transcendental Aesthetic in another manuscript.

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