Can Transcendental Epistemology be Naturalized?

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I

Transcendental epistemology is, among other things, an inquiry into the conditions of human knowledge. The conditions which are the focus of transcendental epistemology are *transcendentally necessary* conditions, that is, necessary conditions which 'reflect the structure of the human cognitive apparatus'.[1] I will refer to transcendental epistemology's investigation of transcendentally necessary conditions as its *conditions project*. In asking whether transcendental epistemology can be 'naturalized', I am asking whether its conditions project can be naturalized.

Some versions of naturalism in philosophy claim that philosophical questions are scientific questions, and that epistemology is best looked upon as an enterprise within natural science.[2] Softer versions of naturalism allow that philosophy is an autonomous discipline at least to the extent that it addresses a distinctive set of questions and concerns, but nevertheless insist that 'work in the empirical sciences is deeply relevant to philosophical questions'.[3] In the light of this second version of naturalism, I am going to take it that a naturalized transcendental epistemology is one which is committed to the thesis that a proper investigation of transcendentally necessary conditions must lean in important respects on the deliverances of science.[4] I will call this thesis the *dependence thesis*. Transcendental

[1] H. Allison, *Kant's Transcendental Idealism: An Interpretation and Defense* (New Haven and London: Yale University Press, 1983), 9.

[2] For an influential defence of this view, see Quine's 'Epistemology Naturalized', in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), 69–90.

[3] H. Kornblith, 'The Role of Intuition in Philosophical Inquiry: An Account with No Unnatural Ingredients', in M. DePaul and W. Ramsey (eds), *Rethinking Intuition: The Psychology of Intuition and Its Role in Philosophical Inquiry* (Lanham: Rowman & Littlefield Publishers Inc., 1998), 140.

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epistemology can be naturalized only if the dependence thesis is correct.[5]

A simple argument for the dependence thesis is this: transcendentally necessary conditions are ones which reflect the structure of the human cognitive apparatus, but this apparatus consists of 'those characteristics of human organisms that make it possible for them to come to know things about what is going on around them'.[6] These are therefore the characteristics which a condition of knowledge must reflect for it to count as a transcendental condition. The characteristics of human organisms that make it possible for them to come to know things about what is going on around them are, or include, a range of psychological, physiological and biological characteristics. For an example, if one is seriously interested in trying to understand the human cognitive apparatus, then one must study the nature and modes of operation of the human brain, nervous system and sense-organs. The study of these and other aspects of our cognitive apparatus is the business of empirical science. The study of conditions of knowledge which are determined by the human cognitive apparatus is therefore also the business of empirical science. That is why a proper investigation of transcendentally necessary conditions must lean in important respects on the deliverances of science, especially neurosphysiology and cognitive science.

Kant rejects the dependence thesis because he thinks that it is based on a fundamental misuderstanding of the nature of transcendental epistemology. He describes transcendentally necessary conditions as '*a priori* conditions'[7] and what he means by this is that such conditions cannot be investigated empirically. I will refer to Kant's insistence on the *a priority* of transcendentally necessary conditions as his *a priority thesis*. The transcendental conditions of

[4] This way of putting things is intended to echo Alvin Goldman's claim that what he regards as the key missions of epistemology 'lean in important respects on the deliverances of science, specifically cognitive science' ('Epistemic Folkways and Scientific Epistemology'), in *Liaisons: Philosophy Meets the Cognitive and Social Sciences* (Cambridge, Mass.: The MIT Press, 1992), 156.

[5] Among recent Kant commentators, Patricia Kitcher comes closest to endorsing the dependence thesis. See her *Kant's Transcendental Psychology* (Oxford: Oxford University Press, 1990).

[6] B. Stroud, *The Significance of Philosophical Scepticism* (Oxford: Clarendon Press, 1984), 160.

[7] I. Kant, *Critique of Pure Reason*, translated by Norman Kemp Smith (London: Macmillan, 1933), A93/ B126. All references in this form will be to this work.

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knowledge which Kant is interested in establishing, and which he thinks are incapable of being established empirically, are space, time and the categories. If the conditions project of transcendental epistemology is an *a priori* investigation of *a priori* conditions, it must be a mistake to see it as leaning in important respects on the deliverances of empirical science. This means that transcendental epistemology, as Kant conceives of it, cannot be naturalized, even though the conditions which it studies are determined by the human cognitive constitution.

For Kant's position to be tenable, he must show where the simple argument for the dependence thesis goes wrong. He must also defend the *a priority* thesis. Defending this thesis is a matter of explaining *why* transcendentally necessary conditions are not open to empirical investigation and *how* non-empirical or *a priori* knowledge of such conditions is possible. Analytic transcendental epistemology is the view that what Kant calls 'transcendentally' necessary conditions are not open to empirical investigation because they are logically or conceptually necessary. The proper methodology of analytic transcendental epistemology is not empirical science but conceptual analysis.[8] Kant rejects both tenets of the analytic approach to his conditions project. Conditions of knowledge which are determined by the human cognitive apparatus are not conceptually necessary and cannot be discovered through conceptual analysis. In showing where the simple argument goes wrong and in defending the *a priority* thesis Kant must not renege on either of these claims if he is to remain true to his own outlook.

My claim is that Kant is right to oppose the dependence thesis, but that the best objections to this thesis lead to the conclusion that transcendentally necessary conditions are not, in any interesting sense, a reflection of the human cognitive apparatus. The conditions project of transcendental epistemology cannot be naturalized not because an investigation of conditions of knowledge which are determined by our cognitive constitution cannot be naturalized but because the human cognitive constitution is not the source of the conditions which Kant tries to establish. In this sense, Kant's position is untenable. While this might sound like an argument for analytic transcendental epistemology, it is also debatable whether space, time and the categories can be shown to be conceptually necessary conditions of human knowledge. The question is whether the best

[8] P. F. Strawson's *The Bounds of Sense* (London: Methuen, 1966) is perhaps the best example of an exercise in what I am calling 'analytic transcendental epistemology'.

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objections to the dependence thesis leave transcendental epistemology with a coherent methodology or whether they show that Kant's claims about the conditions of human knowledge are indefensible.

II

The simple argument turns on the claim that the human cognitive apparatus is made up of what can only be described as psychological, physiological and biological characteristics of human organisms. For present purposes, I will take the psychological characteristics of human organisms to consist of those processes, mechanisms and propensities which constitute the subject-matter of empirical psychology. If, as is surely the case, such processes, mechanisms and propensities are all a part of our cognitive apparatus, the deliverances of empirical psychology must have a bearing on the conditions project. Equally, given that the human brain, central nervous system and sense-organs are among those characteristics of human organisms which make it possible for them to come to know things about what is going on around them, it is difficult to see how neurophysiology and cognitive science could fail to be deeply relevant to the study of conditions which are grounded in our cognitive apparatus.

Where does this argument for the dependence thesis go wrong? One answer to this question would be that when Kant talks about our cognitive apparatus he is not referring to psychological, physiological and biological characteristics of human organisms. For Kant, our cognitive apparatus consists of a range of cognitive faculties, including 'sensibility' and 'understanding'. The fact that sensibility and understanding count as cognitive faculties is, in turn, a reflection of his conception of knowledge. According to this conception, knowledge of an object involves two factors, a concept through which it is thought and an 'intuition' through which it is given. Objects are given to us by means of sensibility, the mind's 'power of receiving representations in so far as it is in any wise affected'.[9] The faculty which enables us to think about objects of sensible intuition is the understanding, 'the mind's power of producing representations from itself'.[10] As long as the study of these faculties is not the province of empirical science, there is no reason to suppose that the study of conditions of knowledge which are

[9] A51/ B75.
[10] Ibid.

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determined by them is the province of empirical science. So it seems that all that is required to short-circuit the simple argument is to point out that it is structure of human sensibility and human understanding which is the source of transcendentally necessary conditions, and that sensibility and understanding cannot be properly be understood as psychological, physiological or biological characteristics of human organisms. For Kant, our cognitive faculties are the subject-matter of 'transcendental' rather than empirical psychology, and so are not 'psychological' in the sense defined above.

This response does not commit Kant to denying that there is a sense in which the human cognitive apparatus is matter of physiology, empirical psychology and biology. Equally, it does not commit him to denying that there are physiological, psychological and biological conditions of human knowledge. The point is simply that such conditions are not transcendental conditions, and that 'the human cognitive apparatus' in Kant's sense is not something into the nature of which the empirical sciences can provide us with any insight. Transcendentally necessary conditions are *a priori* conditions because the cognitive faculties in which they originate cannot be studied empirically.

Kant claims that human sensibility has certain original 'forms', and that our understanding has certain *a priori* rules or concepts. Conditions of knowledge which reflect the constitution of our faculty of intuition are sensible conditions. Those which reflect the particular constitution of our understanding are intellectual conditions. The sensible conditions of our knowledge might be 'peculiar to us',[11] that is, species-specific, but any being whose intuition is sensible must employ the categories in thinking about the objects of its intuition.[12] The aim of Kant's conditions project is to show, by means of an *a priori* investigation of our cognitive faculties, that space and time are the sensible conditions of human knowledge, while the categories are its intellectual conditions. Kant's project can only be naturalized if these are claims which the empirical sciences are in a position to establish, but this is something which Kant would deny.

Given that what the simple argument regards as the human cognitive apparatus *is* open to investigation in empirical science, it can only be true that the constitution of human sensibility and human

[11] A42/ B60.

[12] For further discussion of the idea that a condition of knowledge might be 'species-specific', see my 'Mind, Knowledge and Reality: Themes from Kant', in A. O'Hear (ed.) *Current Issues in Philosophy of Mind* (Cambridge: Cambridge University Press, 1998), 321–48.

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understanding are *not* open to investigation in empirical science if these cognitive faculties are not identical with, or reducible to, psychological, physiological or biological characteristics of human organisms. This is what advocates of the simple argument need to dispute. Take the case of sensibility. It might be argued, in defence of the simple argument, that what Kant calls 'sensibility' is just 'an array of sense-organs and nerves',[13] and that the difference between talking about Kantian sensibility and talking about our sense-organs and nerves is a difference in sense rather than reference. Since our sense-organs and nerves are amenable to empirical investigation, so is the 'constitution' of our faculty of intuition.

There is support for the idea that sensibility is an array of sense-organs in the first *Critique* and in Kant's *Anthropology from a Pragmatic Point of View*. Sensibility is a 'faculty of knowledge', and this faculty is 'awakened into action' by objects 'affecting our senses'.[14] Each of the (outer) senses has 'a specific organ'.[15] Our sense organs are *bodily* organs, some of which depend on 'mechanical action', while others depend on what Kant describes as 'chemical action'.[16] Once it is acknowledged that our possession of a faculty of sensibility has to do with our possession of the appropriate bodily organs, it is no longer possible to short-circuit the dependence thesis by claiming that it is the structure of human sensibility rather than the structure of our sense-organs which is the source of transcendentally necessary conditions. The 'rather than' in this way of putting things is just what is at issue.

Kant would have several objections to a physiological conception of sensibility. The first is that it would undermine the *a priority* of his conditions project. As Bennett remarks, 'Kant cannot take outer sense to be some part of the nervous system, and base his theory upon neurophysiology, for he is emphatic that a science of human bodies could yield only a posteriori results'.[17] On its own, this is not an argument against thinking of sensibility in physiological terms. On Bennett's interpretation, Kant wants to argue from the *a priority* of his conditions project to the unacceptability of the physiological reading of 'sensibility', but the simple argument can be seen as arguing from a physiological reading to the unacceptability of

[13] J. Bennett, *Kant's Analytic* (Cambridge: Cambridge University Press, 1966), 22.

[14] B1.

[15] I. Kant, *Anthropology From a Pragmatic Point of View*, translated by Mary J. Gregor (The Hague: Martinus Nijhoff, 1974), 37.

[16] Ibid., 36.

[17] Op. cit. note 13, 18.

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Kant's *a priority* thesis. Viewed in this light, the fact that a science of human bodies can only yield *a posteriori* results is part of the naturalist's case against the *a priority* thesis rather than a reason for thinking that sensibility is not an array of sense-organs and nerves.

A different objection to thinking of 'sensibility' in physiological terms is this: by Kant's lights, 'sensibility' is the source of the sensible conditions of human knowledge. In particular, it is the structure of human sensibility which accounts for the fact that space and time are necessary conditions of human knowledge. Time is a condition of human knowledge because 'no object can ever be given to us in experience which does not conform to the condition of time'.[18] Space is a condition of human knowledge in that 'it is the subjective condition.... under which alone outer intuition is possible for us'.[19] In contrast, our nerves and sense-organs are not the source of sensible conditions of knowledge, and the fact that space and time are such conditions cannot be accounted for by reference to the workings of our nerves and sense-organs. So Kant cannot take sensibility to be some part of the nervous system because this would make a nonsense of the project of establishing sensible conditions of knowledge by investigating the structure of human sensibility.

One response to this objection would be to agree that the fact that space and time are conditions of knowledge cannot be accounted for by reference to the workings of our nerves and sense-organs, but to argue that this is not a good reason for not conceiving of 'sensibility' in physiological terms. Instead, it can be seen as a good reason for denying that space and time are conditions of knowledge which are determined by the 'constitution of our faculty of intuition'. A different response, which is more in keeping with the idea of a naturalized transcendental epistemology, would be to question the assertion that the workings of our nerves and sense-organs cannot account for the sensible conditions of human knowledge. I will come back to these responses below, but for now the important point is that it is tendentious to try to settle the relationship between 'sensibility' and aspects of human physiology by assuming the correctness of Kant's own conception of the achievements and methodology of his conditions project.

The most promising objection to the physiological reading of sensibility is that it confuses constitutive and causal considerations. What Kant calls 'sensibility' is a receptive 'power'[20] or 'capacity',[21]

[18] A35/ B52.
[19] A26/ B42.
[20] A51/ B75.
[21] A19/ B33.

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and it is true that we would not have this power or capacity if we lacked the appropriate bodily organs and nervous system. This is just another way of saying that the appropriate physiology is a *causally* necessary condition of our possession of a faculty of sensibility. It is wrong to conclude from this that human sensibility *consists in* an array of sense-organs and nerves, or that the structure and forms of human sensibility can be understood by understanding the workings of our sense-organs and nervous system. As long as human sensibility is not identical with, or reducible to, physiological conditions, these conditions can be open to empirical investigation without the constitution of our faculty of intuition being open to empirical investigation.

Although this objection carries some weight, it is not decisive as it stands. For a start, some advocates of the simple argument are likely to respond that they regard a blanket distinction between constitutive and causal issues as indefensible. Even if, for the sake of argument, one is prepared to grant that there might be a viable distinction between constitutive and causal conditions, Kant has yet to explain this distinction. He has still to explain what sensibility 'consists in', and how its 'constitution' relates to the constitution and operations of our sense-organs. Unless these gaps in Kant's account can be filled in, the present objection will leave many advocates of the simple argument unmoved. I will come back to this point below, when I take a closer look at the notion of a constitutive condition.

By Kant's lights, the intellectual conditions of human knowledge are the categories. These are concepts such as *substance* and *causality* which have their 'first seeds and dispositions in the human understanding',[22] and which we must employ in thinking about objects of sensible intuition. On a psychological reading, the sense in which we 'must' employ a category such as that of causality in thinking about objects is that we are psychologically so constituted as to be incapable of thinking about objects other than in causal terms. As Hume might have said, we cannot help thinking that way, just as we cannot help breathing or feeling. On the assumption that the categories are, in this sense, merely 'subjective dispositions of thought',[23] their indispensability is a form of psychological indispensability. According to a Humean version of the simple argument, this is the sense in which these concepts are 'conditions of human knowledge which reflect the structure of the human cognitive apparatus'. Since subjective dispositions of thought are the concern of empirical psychology, this version of the simple

[22] A66/ B91.

[23] B167.

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argument represents the understanding as a psychological faculty which is open to empirical investigation by representing it as consisting of such dispositions.

Kant's objection to this view is that treating the categories as subjective dispositions of thought detracts from their 'objective validity'.[24] The objective validity of the categories consists in their indispensability for thought or experience, but the indispensability which Kant has in mind is not psychological in Hume's sense. Kant's way of making this point is to deny that the necessity of the categories is a 'subjective necessity'.[25] Transcendental epistemology is primarily concerned with questions of right rather than with questions of fact, and it is this normative dimension of his project which, according to Kant, cannot captured in naturalistic terms. Merely pointing out that a concept such as *cause* is psychologically indispensable for us is not enough to show that we are *justified* in thinking about objects of intuition in causal terms.

A Humean response to be objection would be to question the distinction between subjective necessity and objective validity. For Kant, establishing the subjective necessity of the concept of cause is not the same as establishing its objective validity because 'I would not then be able to say that the effect is connected with the cause in the object, that is, necessarily, but only that I am so constituted that I cannot think this representation otherwise than as thus connected'.[26] As result, the objective validity of our causal judgements would be 'nothing but sheer illusion'. The suggestion here seems to be that we are justified in thinking about objects of intuition in causal terms only if these objects are themselves causally connected, and that it does not follow from the fact that we must think of objects as causally connected that they are causally connected. Yet, for an idealist such as Kant, the 'objects' that are in question are 'appearances', and their being causally connected *is*, in way, a consequence of our representing them as thus connected. So it seems that Kant's explanation of the distinction between subjective necessity and objective validity fails to take sufficient account of his own idealism. His fundamental point is, no doubt, that his 'must' is different from Hume's, but the simple argument's point is that representing the necessity of the categories as a reflection of the structure of the human cognitive apparatus is really just another way of saying what Hume says when he represents human nature as the source of causal thinking.

[24] A93/ B126.
[25] B168.
[26] ibid.

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The position, then, is this: the simple argument relies on the assumption that the human cognitive constitution consists of various psychological, physiological and biological characteristics of human organisms, but Kant regards this assumption as unacceptable. He regards it as unacceptable because he thinks that it cannot account for the fact that space, time and the categories are transcendentally necessary conditions of human knowledge, that it confuses constitutive and causal considerations, and that it detracts from the objective validity of the categories. In reply, advocates of the simple argument protest that Kant seriously underestimates the resources that are available to them, that many of his objections are question-begging, and that he himself is unable to explain and justify the very distinctions and assertions which he accuses the simple argument of undermining or failing to accommodate. It remains to be seen whether these protests are ultimately convincing, but the least that they show is that there is much more work to be done to settle the dispute between Kant and the simple argument.

Furthermore, even if the simple argument is unsuccessful, Kant must still give a positive account of how transcendentally necessary conditions can be known *a priori*. This is a serious challenge, given his view that 'any knowledge that professes to hold *a priori* lays claim to be regarded as absolutely necessary'.[27] It is natural to read this as implying that contingent truths cannot be known *a priori*. Yet Kant sometimes represents it is as a contingent fact about human cognitive faculties that space and time are the forms of our sensibility and that our understanding operates by means of the categories.[28] In that case, it is difficult to see how it can be known *a priori* that space and time are the forms of our sensibility and that the categories are the rules of our understanding. On the present reading of Kant, space, time and the categories are, at best, contingently necessary conditions of human knowledge, and it is arguable that contingently necessary conditions cannot be known *a priori*. So even if the simple argument for the dependence thesis relies on some questionable assumptions by Kant's lights, the *a priority* thesis remains problematic.

[27] Axv.

[28] As Strawson remarks, Kant takes it as 'a basic *fact* about human cognitive faculties—as something fundamentally *contingent*, given and inexplicable—that we have just the forms and functions of judgement, and just the (spatial and temporal) forms of sensibility, that we do have' ('Sensibility, Understanding, and Synthesis: Comments on Henrich and Guyer'), in E. Förster (ed.) *Kant's Transcendental Deductions* (Stanford: Stanford University Press, 1989), 70.

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Kant only faces the difficulty of explaining how transcendentally necessary conditions can be known *a priori* because he believes that these conditions cannot be studied empirically. I have so far not attempted to explain why he believes that this is the case. If Kant has a knockdown argument for the *a priority* of transcendental conditions, then this would be reason enough for rejecting the conclusion of the simple argument, quite apart from the more detailed objections outlined above. If, on the other hand, it turns out that his arguments for the *a priority* of transcendental conditions are unconvincing, then it would be no surprise that he has such difficulty explaining how *a priori* knowledge of such conditions is possible. So it is now time to look at Kant's positive arguments for the *a priority* thesis. It will emerge that many of these arguments have a direct bearing on his criticisms of the simple argument, and on the responses to these criticisms outlined above.

III

An influential argument for the *a priority* thesis begins by pointing out that necessity is, for Kant, a sure criterion of *a priori* knowledge.[29] Trivially, transcendentally necessary conditions are *necessary* conditions. It follows that the conditions which are the focus of transcendental epistemology are also *a priori*, and so are not open to empirical investigation. Barry Stroud sets out an argument along these lines in his discussion of the thesis that the subject-matter of transcendental philosophy 'cannot be studied empirically'. This is so because

> any investigation of that subject-matter will be occupied with that knowledge, or those features of 'the understanding', which *must* be present for any empirical knowledge to be possible, and for Kant we cannot discover those necessary conditions by empirical means. Experience, Kant says, teaches us 'that a thing is so and so, but not that it cannot be otherwise' (B3). Necessity is a 'sure criterion' of the *a priori*; if we know something which 'in being thought is thought as *necessary*' our knowledge of that necessity cannot be empirical but must be *a priori* (B3). So if we know that certain things must be known for any empirical knowledge of objects to be possible, our knowledge in that case cannot be empirical but must be *a priori*.[30]

[29] See B4.

[30] B. Stroud, *The Significance of Philosophical Scepticism*, 154.

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This argument suggests, in effect, that transcendental epistemology cannot be naturalized because the necessity of transcendentally necessary conditions guarantees their *a priority*. A naturalized transcendental epistemology would have to be committed to the dependence thesis, but the argument which Stroud attributes to Kant looks like a knockdown argument against this thesis. I will call this the *argument from necessity* against the possibility of a naturalized transcendental epistemology.

This argument is defective in a number of important respects. To begin with, there is a question about the thesis that necessity is a sure criterion of *a priori* knowledge. As Dummett remarks, *a priori* propositions can be subdivided into 'those which can be known *a posteriori*, and those which, if known at all, can only be known *a priori*'.[31] Kant's *a priority* thesis requires that transcendentally necessary conditions are *a priori* in the second of these senses, but it is far from obvious that the fact that a proposition is known to be necessary is a sure criterion of its being such that it can only be known *a priori*. If necessity is only a sure criterion of *a priority* in the first of Dummett's senses, or if there are necessary truths which cannot be known *a priori*, then propositions stating transcendentally necessary conditions might be necessarily true without being *a priori* in the sense required by the *a priority* thesis.

An even more serious objection to the argument from necessity is that it confuses necessary conditions with necessary truths. In general, it can be true that P is a necessary condition of Q even though it is not a necessary truth that P is a necessary condition of Q.[32] So even if necessity is a sure criterion of *a priori* knowledge, the *a priority* of transcendental conditions is not an immediate and inevitable consequence of their being *necessary* conditions. At the very least, one would need to show that transcendentally necessary conditions are not merely contingently necessary. The argument which Stroud attributes to Kant assumes that propositions stating transcendentally necessary conditions state truths which are themselves necessary, but this is a substantive assumption which needs to be argued for. This point is particularly embarrassing for Kant since, as remarked above, the idea that transcendentally necessary conditions are only contingently necessary, that is, that they only

[31] M. Dummett, *Frege: Philosophy of Mathematics* (London: Duckworth, 1991), 27.

[32] For further discussion of this point, see my 'Self-Directed Transcendental Arguments', in R. Stern (ed.), *Transcendental Arguments: Problems and Prospects* (Oxford: Oxford University Press, 1999), 83–110.

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obtain in virtue of contingent facts about the human cognitive constitution, is one for which he has considerable sympathy.

The argument from necessity takes it that what is doing the work in Kant's defence of the *a priority* of transcendentally necessary conditions is the fact that these conditions are necessary, but there is another reading of the argument according to which the important point is that transcendental conditions are necessary conditions of the possibility of *knowledge*. While other necessary conditions can, perhaps, be known about empirically, the present suggestion is that conditions of *knowledge* cannot be known about in this way. That is why, if we know that certain things must be the case for any knowledge to be possible, our knowledge in that case cannot be empirical but must be *a priori*. I will call this the *argument from knowledge* for the *a priority* of transcendentally necessary conditions.

An objection to the argment from knowledge is this: it is plausible that if we lacked suitable brains, sense-organs and nervous systems, we would be incapable of knowing anything at all about what is going on around us. Hence, 'the brain, the central nervous system, sense organs and so forth could legitimately be described as conditions of human knowledge'.[33] However, it cannot be known *a priori* that the brain and central nervous system are necessary conditions of human knowledge. So it is false that our knowledge of conditions of knowledge must be *a priori*.

A promising response to this line of argument would be to introduce the notion of a *constitutive condition*. On one reading, the point of distinguishing between transcendental conditions and psychological or physiological conditions is that the former are constitutive conditions whereas the latter are causal. The brain, nervous system and sense-organs are among the causal conditions of human knowledge, and the naturalist is right to point out that the causal conditions of human knowledge can be studied empirically. It does not follow that the subject-matter of transcendental epistemology can be studied empirically because transcendentally necessary conditions are constitutive rather than causal. Once it is agreed that constitutive conditions of knowledge are not objects of empirical study, and that Kant is concerned with constitutive rather than causal conditions, it must also be agreed that the conditions project of transcendental epistemology cannot legitimately be seen as an empirical inquiry into the conditions of human knowledge or as continuous with empirical science.

[33] H. Allison, *Kant's Transcendental Idealism: An Interpretation and Defense*, 10.

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The distinction between constitutive and causal considerations is precisely the distinction which I envisaged Kant as appealing to in response to the simple argument's conception of the relationship between 'sensibility' and 'sense-organs'. It can now be seen that this distinction serves several different and important purposes. Firstly, it promises to explain why transcendentally necessary conditions must be *a priori*. The present proposal is that transcendentally necessary conditions must be *a priori* because they are constitutive conditions of knowledge and because constitutive conditions cannot be studied or known about empirically. Secondly, the distinction promises to cast light on how transcendentally necessary conditions can be known *a priori*. If one can explain how *a priori* knowledge of constitutive conditions is possible, then one should be in a position to explain how *a priori* knowledge of transcendental conditions is possible. The notion of a constitutive condition also has a bearing on the problem of objective validity. Perhaps Kant's thought about the categories is that their objective validity consists in their being constitutive rather than merely psychological conditions of knowledge. As long as one thinks of a study of the conditions of human knowledge as a study of those characteristics of human organisms that make it possible for them to come to know things about what is going on around them, it is hardly surprising that one should conclude that 'the best way to carry out such a study would seem to be by observing human beings and trying to understand how they work'.[34] It now appears that the problem with this approach is that its conception of the conditions of knowledge which are at issue in transcendental epistemology is far too undiscriminating. Once it is recognized that transcendental conditions are constitutive, it is no longer obvious that the best way of studying them is to observe human beings and see how they work.

The constitutive version of the argument from knowledge faces a number of difficult challenges. One is to explain the distinction between constitutive and causal conditions of knowledge, and to make it plausible that constitutive conditions cannot be studied empirically. A constitutive account of knowledge is an account of what knowledge consists in, an account of what makes it the case that a given state is a state of knowledge. Suppose that such an account proceeds by specifying the conditions which must be fulfilled for a state to count as a state of knowledge. These conditions will be constitutive conditions. In contrast, the causal conditions of human knowledge are those characteristics of human organisms

[34] B. Stroud, *The Significance of Philosophical Scepticism*, p. 160.

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which make it possible for them to come to know things about what is going on around them, but giving an account of such characteristics is not the same as giving an account of *what it is* for an organism, human or otherwise, to know what is going on around it. Familiar examples of constitutive conditions of knowledge are truth and belief. More controversially, it has also been held that there is a causal requirement on knowledge, but it is a constitutive rather than a causal question whether this view is correct. Even causal theories of knowledge can be read as accounts of what knowledge consists in.

It is not a general truth that constitutive conditions are not open to empirical investigation. Arguably, what it is for something to be a sample of gold is its having the atomic number 79, but this is an *a posteriori* constitutive condition. In contrast, transcendentally necessary conditions are supposed to be *a priori* constitutive conditions. On an analytic reading, the sense in which transcendental conditions are constitutive is that they are conceptually or logically necessary. On the assumption that conceptually or logically necessary conditions are not open to empirical investigation, and that such conditions can be known *a priori* through conceptual analysis, this would explain why transcendentally necessary conditions must be *a priori* and how they can be. Just as one can discover, by analysing the concept *bachelor*, that being unmarried is a conceptually necessary condition for being a bachelor, so the analytic reading proposes that constitutive conditions of knowledge can be discovered non-empirically be analysing the concept of knowledge.

There are many difficulties with the analytic reading of the sense in which transcendental conditions are constitutive. On one view, the concept of knowledge is, unlike the concept *bachelor*, unanalysable.[35] More cautiously, it might be held that analysis or elucidation of the concept of knowledge will not establish substantive conditions of the type which Kant is interested in establishing. Conceptual analysis is the proper methodology for discovering conceptual truths, but Kant would deny that it is a conceptual truth that the categories are indispensable for experience or that space and time are the sensible conditions of human knowledge. This means that he must find a different route from the premise that transcendentally necessary conditions are constitutive to the conclusion that they are *a priori*.

By Kant's lights, an acceptable route from the constitutive status of transcendental conditions to their *a priority* would not only have

[35] See T. Williamson, 'Is Knowing a State of Mind'?, *Mind* **104**, No. 415 (1995), 533–66.

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to do justice to the alleged fact that these conditions reflect the structure of the human cognitive apparatus and so are not conceptually necessary. It would also have to respect the point that the truths about our cognitive faculties to which transcendentally necessary conditions are answerable may well be contingent truths. It is difficult to see how a coherent argument for the *a priority* of constitutive conditions can combine these features. It is not that there is anything wrong in principle with the idea that there are constitutive conditions which do not obtain as a matter of conceptual necessity. Having the atomic number 79 is a constitutive condition for being gold, but it is not a conceptual truth that gold has the atomic number 79. However, this example is of little use for present purposes, since it is arguably both necessary and *a posteriori* that gold has this atomic number, whereas Kant thinks that it is both contingent and *a priori* that space and time are constitutive conditions of human knowledge. In any case, if the object of the exercise is to show that transcendental epistemology cannot be naturalized, then it is not a good idea to try to understand some of its key theses by treating *human knowledge* as a natural kind like gold.[36]

Another problematic aspect of Kant's position is his insistence that constitutive conditions might be species-specific in scope. On one view, the point of saying that some condition C is a *constitutive* condition of empirical knowledge is to say that C is a necessary condition of *any* empirical knowledge, human or otherwise. Conditions which are not universal in scope are not constitutive. For example, it would be unacceptable to respond to the familiar suggestion that knowledge is justified true belief by arguing that while truth, belief and justification are indeed necessary conditions of *human* knowledge, there might be other beings who are not bound by these conditions. The way in which human beings meet the justification condition may well be different from the way in which other knowing beings, if any, meet this condition, but the justification condition cannot intelligibly be thought of as both constitutive and peculiar to humans. The idea of the human is 'the idea of what pertains to a certain species of animals',[37] but it is difficult to think of genuinely constitutive conditions of knowledge as only pertaining to a certain species of animals.

[36] For a defence of the view that knowledge is something like a natural kind or, at any rate, a natural phenomenon, see H. Kornblith, 'In Defense of a Naturalized Epistemology', in J. Greco and E. Sosa (eds), *The Blackwell Guide to Epistemology* (Oxford: Basil Blackwell Publishers Ltd., 1999), 158–69.

[37] J. McDowell, *Mind and World* (Harvard: Harvard University Press, 1994), 77.

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To summarize, the unmodified argument from knowledge maintains that transcendentally necessary conditions cannot be studied empirically because they are necessary conditions of knowledge. In response to the claim that there are physiological, biological and psychological conditions of knowledge which can be studied empirically, I introduced the notion of a constitutive condition. The constitutive version of the argument from knowledge claims that transcendentally necessary conditions cannot be studied empirically because they are constitutive conditions of knowledge, but it has now emerged that some constitutive conditions are open to empirical investigation, and that it is not clear, in any case, that Kant is able to explain the sense in which transcendental conditions are constitutive. What is clear is that the supposition that constitutive conditions can be both contingent and species-specific makes it much harder to see why some physiological, psychological and biological conditions of human knowledge should not be regarded constitutive. Since these conditions are open to empircal investigation, this is a further illustration of the point that the constitutive version of the argument from knowledge fails to justify Kant's insistence on the *a priority* of transcendentally necessary conditions.

These difficulties with the Kantian notion of a constitutive condition have a significant impact on what I described as the most promising objection to the simple argument. This was the objection that the physiological reading of 'sensibility' confuses constitutive and causal considerations, and that Kant is concerned with what sensibility consists in rather than in its causal grounds. On an analytic reading, one way to develop an account of what sensibility consists in would be to analyse the *concept* of *sensibility* or that of *receptivity*. This is not how Kant proceeds. His concern is not with the concept of sensibility but with sensibility itself, understood as a human cognitive faculty. He wants to give an account of the nature of this faculty in humans, but it is not obvious that those aspects of human sensibility to which the simple argument draws attention have no place in a constitutive account of what our receptivity consists in. In order to make any progress with this issue, one would need a proper explanation of the sense in which Kant's approach is constitutive, and this is precisely what we do not have.

It has to be said that Kant himself does not explicitly draw on the notion of a constitutive condition. When he tries to explain how *a priori* knowledge of transcendentally necessary conditions is possible, he makes much of the fact that his subject-matter 'is not the nature of things, which is inexhaustible'[38] but aspects of the know-

[38] A12–3/ B26.

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ing subject. Since transcendentally necessary conditions are determined by what is internal to the knowing subject -its cognitive faculties- they 'have not to be sought for without [and] cannot remain hidden from us'.[39] So the conditions which transcendental epistemology investigates are objects of *a priori* knowledge because, and perhaps only because, they 'somehow are to be found "in", or have their "source" in us, the knowing subjects, and not in some independent conditions of states of affairs to which we might or might not have reliable access'.[40] In effect, *a priori* knowledge of transcendental conditions is a form of self-knowledge.

This argument, which purports to explain how transcendental conditions can be known *a priori* rather than why they must be known in this way, is objectionable on at least two counts. The first is that it relies on the somewhat Cartesian-sounding premise that what is internal to us is also transparent to us, but this is something which needs to be argued for rather than simply assumed. Secondly, and more importantly, there is a gap between the idea that one has transparent or privileged access to aspects of one's own mind and the idea that these aspects are knowable independently of experience. It is the latter which needs explaining, but Kant only succeeds in saddling transcendental epistemology with a dubious commitment to the first of these ideas.

The upshot is that Kant fares no better when it comes to explaining how *a priori* knowledge of transcendentally necessary conditions is possible than he is when he tries to make it plausible that conditions of this type cannot be studied empirically. The conditions project of transcendental epistemology can be naturalized only if the dependence thesis is correct, and Kant would be right to reject this thesis if he has convincing arguments for the *a priority* thesis. Unfortunately, it has now emerged that his arguments for the *a priority* thesis are very far from being convincing. And yet there does seem to be something right about the thought that the deliverances of empirical science have very little bearing on the conditions project. The challenge is to spell out what is right about this thought without relying on some of the more dubious Kantian arguments for the *a priority* of transcendental epistemology.

IV

The suggestion that the deliverances of empirical science have little bearing on the conditions project is at odds with the proposal,

[39] A13/ B26.

[40] B. Stroud, *The Significance of Philosophical Scepticism*, 155.

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mentioned above, that a scientific investigation of our nerves and sense-organs is capable of revealing that space and time are the sensible conditions of human knowledge. This proposal is made plausible by the observation that 'the human sensory organs carry their own limitations'[41] and that science tells us a good deal about these limitations. For example, it is empirical science which tells us that our visual receptors are only sensitive to a narrow spectrum of electromagnetic radiation, and therefore that nothing which does not fall within a certain spectrum of electromagnetic radiation can be given to us in visual experience.[42] Why, by the same token, should it not be empirical science which reveals, or is capable of revealing, that no object can be given to us in outer experience which does not conform to the conditions of time and space?

An important difference between the two cases is this: the idea that our visual receptors are only sensitive to a particular spectrum of electromagnetic radiation implies, or is at least consistent with, the thought that there are objects which do not fall within this spectrum. Once it is agreed that falling within a certain spectrum of electromagnetic radiation is not a condition of the possibility of the existence of objects, it makes good sense to try to explain the fact our visual experience is limited to what falls within this spectrum by reference to the constitution and workings of our visual receptors. In contrast, it is arguable that space and time are, in Allison's terminology, 'conditions of the possibility of the being of things'.[43] This is so since 'objects' are particular instances of general concepts, and particulars are individuated by reference to their spatial-temporal locations. The proposal which I would now like to consider is that it is because space and time are the 'forms of particularity'[44] that it does not make good sense to try to explain the fact that they are sensible conditions of knowledge by reference to the constitution and workings of our nerves and sense-organs.

The basis of this proposal is this: what makes it the case that space and time are sensible conditions of knowledge is that the

[41] L. Falkenstein, 'Was Kant a Nativist?', in P. Kitcher (ed.) *Kant's Critique of Pure Reason: Critical Essays* (Lanham: Rowman & Littlefield Publishers Inc., 1998), 40.

[42] See P. Churchland, *Neurophilosophy: Toward A Unified Science of the Mind-Brain* (Cambridge, Mass.: The MIT Press, 1986) 46.

[43] Op. cit. note 1, 11. The 'things' in Allison's formulation are things as they are in themselves. Like Kant, Allison is opposed to the view that space and time are conditions of the possibility of the being of things as they are in themselves.

[44] P. F. Strawson, *The Bounds of Sense*, 52.

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spatial and the temporal are the forms of particularity. Thus, it is only possible to explain the fact that space and time are sensible conditions of knowledge by reference to the constitution and workings of our nerves and sense-organs if it is possible to explain the fact that space and time are the forms of particularity by reference to the constitution and workings of our nerves and sense-organs. The constitution and workings of our nerves and sense-organs cannot account for the forms of particularity. So it is not possible to account for the sensible conditions of knowledge on the basis of an empirical investigation of our nerves and sense-organs. The limitations which such investigations are capable of revealing are not sensible conditions of knowledge.

The principle which underpins this argument, which I will call the *argument from particularity*, is the principle that 'knowledge must be subject to its objects, epistemology to metaphysics'.[45] It is this principle which sustains the move from the premise that space and time are conditions of the possibility of the *being* of the objects of empirical knowledge to the conclusion that they are the sensible conditions under which *knowledge* of such objects is possible. For truth is a logically necessary condition of knowledge, and truth is 'the agreement of knowledge with its object'.[46] This means that the conditions of empirical knowledge must also agree, at least in certain fundamental respects, with the objects of empirical knowledge. Only on the assumption that these objects are fundamentally spatio-temporal is it intelligible that spatio-temporal intuition, that is, sensible awareness of objects *as* spatially or temporally ordered, is required for empirical knowledge of them. This is the sense in which space and time are sensible conditions of knowledge.

To describe space and time as the forms of particularity is to make a claim about the way in which particulars are individuated. It is plausible that this claim cannot be established by psychology or physiology or cognitive science. Since these are not the only empirical sciences, this point is not enough to refute the dependence thesis, but this thesis is still difficult to believe, at least in connection with the sensible conditions of knowledge. Claims about how particulars are individuated are metaphysical claims, and they can only be established by metaphysical or philosophical reflection. Unlike the thought that there might be things which fall outside the spectrum of electromagnetic radiation to which our eyes are sensitive, the thought that there might be particulars which are neither spatial

[45] P. F. Strawson, 'Echoes of Kant', *Times Literary Supplement* 4657 (1992), 12.

[46] A58/ B82.

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nor temporal is one which 'leaves us quite blank'.[47] It is considerations such as this, rather than the deliverances of *any* of the empirical sciences, which help to sustain the metaphysical thesis that space and time are the forms of particularity, together with the epistemological thesis that space and time are conditions of empirical knowledge.

The argument from particularity explains why an important element of transcendental epistemology cannot be naturalized but it is very different in emphasis from the arguments from necessity and knowledge. Instead of arguing against the naturalizing of transcendental epistemology by appealing to the alleged *a priority* of necessary conditions of knowledge, the argument from particularity rejects the dependence thesis on the basis that science cannot establish the *particular* sensible conditions which are the focus of Kant's conditions project. This rightly leaves open the possibility that there are other necessary conditions of knowledge which are not *a priori*. The present account also casts some much needed light on the notion of a constitutive condition. The sense in which spatio-temporal intuition is a constitutive condition of knowledge is that it derives from a conception of what the identity of the objects of empirical knowledge consists in. Spatio-temporal intuition is an *a priori* constitutive condition only if it is an *a priori* truth that space and time are the forms of particularity, but the *a priority* of sensible conditions is a substantive thesis which needs to be argued for rather than an immediate consequence of the observation that sensible conditions are necessary conditions or that they are necessary conditions of knowledge.

Is it an *a priori* truth that space and time are the forms of particularity? The case for saying that it is is that although we perceive particulars as spatio-temporally located, mere perception cannot tell us that spatio-temporal location is the fundamental ground of identity of particulars. If, for this reason, our knowledge of the forms of particularity must be *a priori*, and if it is our knowledge of these forms which is the basis of our knowledge of sensible conditions, then there is something to be said for the idea that our knowledge of these conditions must be *a priori*. In this respect, the argument from particularity supports Kant's insistence on the *a priority* of the conditions project. In other respects, however, the argument from particularity is at odds with Kant's conception of transcendental epistemology. To begin with, to the extent that space and time are

[47] P. F. Strawson, *Subject and Predicate in Logic and Grammar* (London: Methuen, 1974), 16.

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conditions of knowledge in virtue of the spatio-temporality of the objects of knowledge, it would not be right to describe the human cognitive constitution as the source of these conditions. Nor would it be right to regard space and time as conditions which might be species-specific or 'peculiar to us'. Given that space and time are the forms of particularity, any being which is capable of empirical knowledge of particulars must be capable of perceiving spatially and temporally. It is, perhaps, a contingent fact about us that our intuition is spatio-temporal, but it is not a contingent truth that spatio-temporal intuition is a necessary condition of any empirical knowledge of objects which are themselves spatial and temporal.[48]

The source of these areas of disagreement between Kant and the argument from particularity is a deeper disagreement over the principle that knowledge must be subject to its objects. This principle is directly opposed to Kant's thesis that 'objects must conform to our knowledge'.[49] For Kant, the fact that space and time are the forms of particularity is a reflection of the constitution of our faculty of intuition. He would agree with the argument from particularity that an empirical investigation of our nerves and sense-organs cannot establish the forms of particularity, but, as we have seen, it is far from clear what he means when he talks about 'our faculty of intuition' or how he thinks that an investigation of this faculty can establish the forms of particularity. The argument from particularity bypasses Kant's faculty psychology and repudiates his idealism by making the objects of empirical knowledge rather than the subject the source of the spatio-temporal conditions of empirical knowledge. An empirical investigation of our cognitive faculties cannot establish the sensible conditions of empirical knowledge for the simple reason that our cognitive faculties are not the source of these conditions.

It is not an objection to the argument from particularity that it has no truck with transcendental idealism, but it is true that this argument still has to account for the intellectual conditions of empirical knowledge. The crucial question in this connection is whether the categories are forms of particularity in anything like the sense in which space and time are forms of particularity. If so, this would amount to a powerful argument for the objective validity of the categories, and would thereby seriously weaken the case for regarding these concepts merely as subjective dispositions of

[48] Cf. P. F. Strawson, 'Kant's New Foundations of Metaphysics', in *Entity and Identity and Other Essays* (Oxford: Clarendon Press, 1997), 232–243.

[49] Bxvi.

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thought. If not, then one would have to conclude that there is more hope for a psychological conception of the intellectual conditions of empirical knowledge than there is for a physiological conception of the sensible conditions of empirical knowledge.

What, finally, of the suggestion that space and time are not conceptually necessary conditions of knowledge and that analysis or elucidation of the concept of knowledge will not establish substantive conditions of the type which Kant is interested in establishing? It is true that the argument from particularity does not proceed by representing space and time as conceptually necessary conditions of knowledge in the comparatively straightforward sense in which many analytic epistemologists represent truth, belief and justification as conceptually necessary conditions of knowledge. On the other hand, this argument does rely on a number of claims or principles which appear to be the products of what I referred to as 'metaphysical or philosophical reflection'. Take the principle that empirical knowledge requires both intuitions and concepts, or the claim that space and time are the forms of particularity. To give an account of the proper methodology of transcendental epistemology is to give an account of the proper methodology for establishing such claims and principles.

The point of the proposal that transcendental epistemology cannot dispense with conceptual analysis is that the only way to show that knowledge requires both intuitions and concepts is to elucidate the concept of knowledge, and that the only way to show that space and time are the forms of particularity is to trace the connections between the notion of something's being a particular instance of a general concept and the notion of its being spatially or temporally located. This is not to say that the idea of conceptual analysis is unproblematic, but it still has much more going for it than Kant's suggestion that the spatial and temporal conditions of knowledge can be established by studying our own cognitive faculties. The only serious alternative to analytic transcendental epistemology is a naturalized transcendental epistemology, but the argument from particularity suggests that the dependence thesis is highly problematic. And if this thesis is highly problematic, then so is the view that transcendental epistemology is capable of being naturalized.[50]

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