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KANT'S REALISM

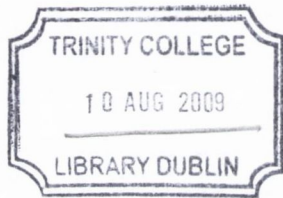
An Investigation into the Essential Interdependence of
the Formal and Material Conditions for the Possibility
of Empirical Knowledge in Kant's Epistemology

by

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Submitted in fulfilment of the requirements for the
degree of Doctor of Philosophy at Trinity College,
Dublin University, in the Department of Philosophy

June 2008



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Declaration

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for
Martine,
Clíona, Eoin
and Finian

For my part, Protagoras, when I see
the subject in such utter confusion
I feel the liveliest desire to clear it up.

Protagoras, 361c

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*Manfred Weltecke
Dublin, June 2008*

Summary

My central claim in this dissertation is that in Kant's epistemology (1) the conditions for the possibility of empirical knowledge (CPEK) comprise not only formal but also material conditions, i.e. CPEK = FCPK and MCPK, and (2) these two kinds of conditions are essentially co-dependent. I shall call this thesis, i.e. (1) and (2), the No-Priority thesis (NPT). By formal conditions for the possibility of empirical knowledge I mean: general a priori anticipatable conditions signifying necessary features of the empirically knowable world. By material conditions for the possibility of empirical knowledge I mean: general but not a priori anticipatable conditions signifying contingent features of the empirically knowable world. While the difference between these two kinds of conditions is, in general, evident from this characterization we ought to observe that both conditions are general – general as opposed not to specific but to particular in the sense in which the materially given content is not general but particular.

I would like to clarify immediately that the NPT goes clearly beyond – and well beyond – the anodyne and uncontroversial fact that according to Kant empirical knowledge requires not only general a priori anticipatable conditions but also a particular empirical content, for this plain fact is compatible, and indeed commonly associated, with the view that, under general conditions for the possibility of empirical knowledge Kant has in mind only a priori anticipatable conditions, and this view is, precisely, denied by the NPT. A clear implication of this thesis is the claim that the material conditions of empirical knowledge, although in themselves contingent and unanticipatable, must be allocated the same transcendental status that in the usual interpretations of Kant's epistemology is only granted to the formal conditions of empirical knowledge. If such a transcendental status is denied to the material conditions of empirical knowledge the relationship between the formal and material conditions becomes merely one of complementation of two in themselves well-defined elements. This would only maintain an *existential* interdependence between the a priori and empirical elements of knowledge, even if this mutual dependence is understood to be a rigid one. My thesis challenges this interpretation and makes the stronger claim that, when properly understood, the formal and material elements in Kant's theory of knowledge depend on each other *essentially*.

The No-Priority-Thesis manifests itself differently in different contexts. The four chapters of this dissertation, which together articulate, explain, and develop this thesis, make up a cumulative argument in its defence. They trace the manifestations of the NPT in relation to three different areas of Kant's epistemology, i.e. in regard of Kant's views (1) on causality, (2) on systematicity and (3) his understanding of the central philosophical concept of matter.

Chapter one offers an interpretation of the difficult and much-debated Second Analogy of Experience. Strong and weak readings of this central argument of the first Critique, which claim that Kant wants to prove that each single event has a single cause and that like causes have like effects or, at least, that every event has some cause, are an immediate and formidable challenge to the No-Priority-thesis. Both of these interpretations are incompatible with the No-Priority-thesis because they maintain that, in the Second Analogy, Kant gives an a priori argument that establishes what the empirical world must be like. The No-Priority-thesis claims that Kant cannot have wanted and did not try to provide such a proof. I show that Kant's argument in the Second Analogy is open to an alternative *weaker-than-weak* interpretation. Only this interpretation takes seriously that the material content of knowledge has a transcendental status, i.e. that it ranks among the conditions for the possibility of knowledge.

Chapters two and three turn to the topic of systematicity. They examine Kant's arguments in the much-neglected Appendix to the Transcendental Dialectic of the First Critique and in the introduction to the Critique of Judgement as well as other crucial texts of the First and Third Critique. While we can see that systematicity is a formal condition for the possibility of knowledge, this alone does not establish that we are entitled to expect that the empirical world will always meet this condition. Yet only to the extent that this contingent and unanticipatable condition is de facto fulfilled is empirical knowledge possible. In this chapter I distinguish between the formal transcendental requirement of systematicity and the complementary material manifestation of this transcendental principle. There can be an empirically cognizable causal order of the world only if the order of the world is not only causal, but systematically explanatory. I argue that, in the context of the problem of systematicity, it is also possible to defend an interpretation that accommodates Kant's seemingly contradictory statements better than its rivals.

Chapter four examines Kant's theory of matter as he develops it in the *Metaphysical Foundations of Natural Science*. In this chapter I argue that, while the a priori metaphysical concept of matter forms part of the formal conditions for the possibility of an intelligible outer experience, this alone does not furnish a guarantee that we are entitled to expect that the empirical world will always present us with phenomena that can be made sense of with the help of this concept. Yet an intelligible experience of outer objects is only possible to the extent that this contingent condition is fulfilled (witness our failure to understand the double slits experiment of quantum mechanics). In direct analogy to the preceding chapters, I argue in this penultimate chapter that the underdetermination of the possibility of experience by the formal transcendental conditions must be redressed not only by an empirically cognizable *causal* order of the world but also by the fact that it contains objects which permit the use of the category of *substance* and the form this takes in outer intuition, i.e. the concept of matter.

The *final chapter* considers briefly the difference the NPT, if accepted, makes to the correct understanding of Kant's central doctrine of Transcendental Idealism. There are two dominant interpretations, i.e. the Two-Worlds-View (defended by Adickes, Strawson, Guyer, VanCleve and others) and the Two-Aspects-View (prominent advocates of which are Allison and Bird). I allocate partial insight to both of these views, yet claim that both fail to accommodate crucial passages of the Kantian corpus. I defend the view that we get furthest in the interpretation of Kant's idealism if we regard the appearances as the *manifestations* of what he refers to as "the substrate of nature". I argue that we can say that the empirical world, while not transcendently real, stands in for the transcendently real world and "does its work", so to speak.

Despite his protests to the contrary in the Prolegomena, where he refers to his "so-called idealism",¹ Kant is still almost always regarded primarily as an idealist. If the No-Priority thesis is correct, then we must consider Kant to be as much a realist as an idealist. For his critical or "formal idealism",² as he wanted it to be known, is not only compatible with an empirical realism: it essentially depends on and implies it. This reading challenges all interpretations that assume that, according to Kant, the subject has a monopoly on form, i.e. that it has the power to shape – no one knows how – a material which is assumed to be "utterly plastic".³

1 Prolegomena, A 207.

2 *ibid.*, A 208.

3 Guyer, 2005, p. 37.

Abbreviations used in the text and footnotes

Abbreviations used for Kant's works

- CoJ = Critique of Judgement
- CopR = Critique of Pure Reason
- GMM = Groundwork of the Metaphysics of Morals
- MFNS = Metaphysical Foundation of Natural Science
- Proleg = Prolegomena to any Future Metaphysics

Other abbreviations used

- NPT = No-Priority thesis
- TAV = Two-Aspects-View
- TWV = Two-Worlds-View
- OWSV = One-World-and-its-Substrate-View
- FGM = Formgebungsmanufaktur
- CPEK = Conditions for the possibility of empirical knowledge
- FCPK = Formal conditions for the possibility of knowledge
- MCPK = Material conditions for the possibility of knowledge
- FTC = Formal transcendental conditions
- MTC = Material transcendental conditions

General note

Unless otherwise indicated, translations from works by authors other than Kant are my own.

Introduction¹

Knowledge is a form of union of Self and not-Self; like all union it is impaired by dominion, and therefore by any attempt to force the universe into conformity with what we find in ourselves.

Bertrand Russell

My central claim in this dissertation is that in Kant's epistemology (1) the conditions for the possibility of empirical knowledge (CPEK) comprise not only formal but also material conditions, i.e. $CPEK = FCPK$ and $MCPK$, and (2) these two kinds of conditions are essentially co-dependent. I shall call this thesis, i.e. (1) and (2), the No-Priority thesis (NPT). By formal conditions for the possibility of empirical knowledge I mean: general a priori anticipatable conditions signifying necessary features of the empirically knowable world. By material conditions for the possibility of empirical knowledge I mean: general but not a priori anticipatable conditions signifying contingent features of the empirically knowable world. While the difference between these two kinds of conditions is in general evident from this characterization we ought to observe that both conditions are general – general as opposed not to specific, but to particular in the sense in which the materially given content is not general but particular.

I would like to clarify immediately that the NPT goes clearly beyond – and well beyond – the anodyne and uncontroversial fact that according to Kant empirical knowledge requires not only general a priori anticipatable conditions but also a particular empirical content, for this plain fact is compatible, and indeed commonly associated with, the view that under general conditions for the possibility of empirical knowledge Kant has in mind only a priori anticipatable conditions, and this view is precisely denied by the NPT. A clear implication of this thesis is the claim that the material conditions of empirical knowledge, although in themselves contingent and unanticipatable, must be allocated the same transcendental status that in the usual interpretations of Kant's epistemology is only granted to the formal conditions of empirical knowledge. If such a transcendental status is denied to the material conditions of empirical knowledge, the relationship between the formal and material conditions becomes merely one of complementation of two in themselves well-defined elements. This would only maintain an *existential* interdependence between the a priori and empirical elements of knowledge, even if this mutual dependence

1 For a retrospective summary see chapter 5, section 2.

is understood to be a rigid one. Challenging this interpretation my thesis makes the stronger claim that, when properly understood, the formal and material elements in Kant's theory of knowledge depend on each other *essentially*.

It is argued that a consequence of this thesis is that there is a sense in which the material element of empirical knowledge is *constitutive* not just for the application of the a priori element of knowledge, but for what these are. Unlike Platonic forms, Kant's a priori principles of knowledge are not well defined independently of and prior to their application. If adopted, the No-Priority-Thesis makes a decisive difference to the way we read Kant, both generally and at crucial junctures. If the dependence of the formal and material elements of knowledge in Kant's theory of knowledge is to be understood as an *essential interdependence*, this opens new ways of understanding Kant's epistemology.

The No-Priority-Thesis manifests itself differently in different contexts. The four chapters of this dissertation, which together articulate and explain this thesis and make up a cumulative argument in its defence, trace these manifestations in relation to three different areas of Kant's epistemology, i.e. in regard to Kant's views on (1) causality, (2) systematicity and (3) his understanding of the central philosophical concept of matter.

Chapter one offers an interpretation of the difficult and much-debated Second Analogy of Experience. Strong and weak readings of this central argument of the first Critique, which claim that Kant wants to prove that each single event has a single cause and that like causes have like effects or, at least, that every event has some cause, are an immediate and formidable challenge to the No-Priority-thesis. Both of these interpretations are incompatible with the No-Priority-thesis because they maintain that, in the Second Analogy, Kant gives an a priori argument that establishes what the empirical world must be like. The No-Priority-thesis claims, on the contrary, that because the formal conditions essentially depend on the material conditions for the possibility of knowledge, which for all we know a priori may not be fulfilled, Kant cannot have wanted and did not try to provide such a proof. In line with this reading, I argue in this chapter that strong and weak interpretations of the Second Analogy face serious difficulties. However, I think I can show that Kant's argument in the Second Analogy is open to an alternative *weaker-than-weak* interpretation. This interpretation alone takes seriously that for Kant the material content of knowledge has a transcendental status, i.e. that it ranks among the conditions for the possibility of knowledge. That all changes in the world are of specific kinds, that there are special laws of nature governing all specific types of events, is for Kant, as I read him, not guaranteed by the principles of the understanding. For all that is knowable a priori, the world might be an utterly unintelligible succession of indefinitely different states of affairs. Defending the weaker-than-weak interpretation thus provides a first substantial defence of the No-Priority-thesis.

Chapters two and three turn to the topic of systematicity, examining Kant's relevant arguments in the much-neglected Appendix to the Transcendental Dialectic of the First Critique and in the introduction to the Critique of Judgement, as well as other crucial texts of the First and Third Critique. While we can see that systematicity is a formal condition for the possibility of knowledge, this alone does not establish that we are entitled to expect that the empirical world will always meet this condition. Yet only to the extent that this contingent and unanticipatable condition is de facto fulfilled is empirical knowledge possible. In the same way in which we can distinguish between the necessity and the regularity aspects of empirical laws, we can also distinguish between the formal transcendental requirement of systematicity and the complementary material manifestation of this transcendental principle. Thus the underdetermination of the possibility of experience by the formal transcendental conditions must be overcome in more ways than one. There can be an empirically cognizable causal order of the world only if the order of the world is not only causal but systematically explanatory. I argue that, in the context of the problem of systematicity, it is also possible to formulate and defend an interpretation that is (1) the only one compatible with the No-Priority-thesis and (2) can, unlike its rivals, accommodate Kant's seemingly contradictory statements better than its rivals.

Chapter four examines Kant's theory of matter as he develops it in the *Metaphysical Foundations of Natural Science*. In this context I argue that, while the a priori metaphysical concept of matter forms part of the conditions for the possibility of an intelligible outer experience, this alone does not furnish a guarantee that we are entitled to expect that the empirical world will always present us with phenomena that can be made sense of with the help of this concept. Yet an intelligible experience of outer objects is only possible to the extent that this contingent condition is fulfilled (witness our failure to understand the double slits experiment of quantum mechanics). Thus, in the same way in which we can distinguish between the necessity and the regularity aspects of empirical laws, i.e. the formal and the material side of the special laws of nature, we can also distinguish between the metaphysical and the complementary empirical concept of matter. In direct analogy to the preceding chapters, I argue in this penultimate chapter that the underdetermination of the possibility of experience by the formal transcendental conditions must be redressed not only by an empirically cognizable causal order of the world, but also by the fact that it contains objects which permit the use of the category of substance and the form this takes in outer intuition, i.e. the concept of matter.

The *final chapter* considers the difference the NPT, if accepted, should make to the correct understanding of Kant's central doctrine of Transcendental Idealism. The two dominant interpretations, the Two-Worlds-View (Adickes, Strawson, Guyer, VanCleve) and

the Two-Aspects-View (Allison, Bird) must each discount or play down those passages of Kant's text which contradict the reading they advocate. This is difficult to do. There is strong textual support for both readings. By contrast, the interpretation that is implied by the NPT can allocate genuine insight to both these rival views and yet claim that they get hold of only part of the truth: the Two-Worlds-View tries to do justice to the fact that, according to Kant, we cannot dogmatically equate empirical reality with the whole of reality. But what more there exists is not another world. This is where the Two-Aspects-View has its merits. It sees correctly that, in Kant's particular kind of idealism, no other world and its objects – for us hidden behind a veil of perception – can be assumed to exist, however, it also fails to accommodate crucial passages of the Kantian corpus. Thus Kant repeatedly refers to the "substrate of nature". Reflecting on these passages I think we have to say that these references cannot be given an anodyne two-aspects interpretation. Instead, I think that we get furthest in the interpretation of Kant's idealism if we regard the appearances as the manifestations of this substrate. Adickes, recommending the interpretation of Riehl who in turn acknowledged Schopenhauer's influence, already and I think correctly saw that in the special necessities of the empirical world we are in direct touch, so to speak, with the substrate of nature.² Thus, while our experience is limited to appearances, these can be regarded on the empirical level as though they were things in themselves: we can therefore say that the empirical world, while not transcendently real, stands in for the transcendently real world and "does its work", so to speak. I would like to emphasize, however, that my aim in this final chapter is not to defend this view, but merely to show that it follows from the NPT which shall be taken to have been defended in chapters 1 to 4.

Despite his protests to the contrary in the Prolegomena, where he refers to his "so-called idealism",³ Kant is still almost always regarded primarily as an idealist. If the No-Priority thesis is correct, the view that we should adopt of Kant's philosophy of knowledge shows him to be as much a realist as an idealist. For his critical or "formal idealism",⁴ as he wanted it to be known, is not only compatible with an empirical realism: it essentially depends on and implies it. This reading challenges all interpretations which assume that, according to Kant, the subject has a monopoly on form, i.e. that it has the power to shape – no one knows how – material which is assumed to be "utterly plastic".⁵

2 Adickes, *Kant und das Ding an sich*, p. 11

3 *Proleg.*, A 207

4 *ibid.*, A 208

5 Guyer, 2005, p. 37

Chapter 1

Three Rival Interpretations of the Second Analogy of Experience

... we cannot form the least conception *a priori* of the possibility of dynamical connection, and ... the categories of the pure understanding do not suffice for devising any such conception, but only for apprehending it when met with in experience.

Critique of Pure Reason, B 798

1. Introduction

According to the No-Priority thesis briefly outlined in the introduction to this dissertation, the conditions for the possibility of empirical knowledge consist of both material and formal conditions. The No-Priority thesis claims that the *a priori* principles for the possibility of empirical knowledge can be properly formulated only by reference to the empirical content of knowledge. According to Kant, the task of the *Analytic of Principles* is to demonstrate how the categories are to be applied to appearances.¹ My thesis claims that this application is essential to the exposition of these principles. The principles of the understanding reach their full determination only through this application, for without it they are incomplete as principles. Kant says that only through this application do the principles of the understanding reach their “logical clarity”.² If it is the case (i) that the dependence of the formal and material conditions for the possibility of empirical knowledge is mutual and essential and (ii) that the fulfilment of the material transcendental conditions is an unanticipatable contingent matter, this has immediate consequences as to what we may expect to be provable by these principles. It would appear that what these principles can establish is less than what they are generally believed to establish. According to a widespread interpretation of Kant’s epistemology, the conditions for the possibility of knowledge explain the fundamental structure of the world. This is thought to be possible because it is assumed that the mind somehow “imposes” its forms onto or “injects” them into the empirical world.

1 See CopR, B 171.

2 See *ibid.*, B 241: “Certainly, the logical clearness of this representation of a rule determining the series of events is possible only after we have employed it in experience.”

The different interpretations received by his much-discussed and difficult Second Analogy of Experience represent an especially clear paradigmatic case of this reading of Kant. Strong and weak readings of this central argument of the First Critique, which claim that Kant wants to prove that each single event has a single cause and that like causes have like effects or, at least, that every event has some cause, thus pose an immediate and formidable challenge to the No-Priority thesis. Both of these interpretations are incompatible with the No-Priority thesis because they maintain that in the Second Analogy Kant gives an a priori argument that establishes what the world, albeit the world of appearances, must be like. Challenging this reading, the No-Priority thesis claims that because the formal conditions *essentially* depend on the material conditions for the possibility of knowledge, and because these conditions may, for all we know a priori, not be fulfilled, Kant cannot have wanted and therefore did not try to provide such a proof. In line with this reading it will be argued in this chapter that strong and weak interpretations of the Second Analogy face serious difficulties.

It will be further contended that Kant's argument in the Second Analogy can be given an alternative weaker-than-weak interpretation. Only the weaker-than-weak interpretation takes the role of the contingent material content of empirical knowledge as seriously as it must be taken if the structure of the material content has a transcendental status, i.e. if it ranks among the conditions for the possibility of empirical knowledge. Demonstrating the tenability of the weaker-than-weak interpretation will thus serve to defend the No-Priority thesis. Moreover, this will show how the No-Priority thesis manifests itself at a crucial juncture of Kant's argument in the First Critique. We will see that in the context of the Second Analogy the No-Priority thesis manifests itself in the claim that the applicability of the category of causality depends on nature contingently being a certain way, i.e. being governed by empirical laws. It will emerge that Kant's conception of the a priori formal conditions for the possibility of empirical knowledge does not imply that these have more weight than the material conditions for the possibility of empirical knowledge. Arguing against such a view, I hope to show that the categories grounded in the synthetic unity of the apperception are clearly ancillary and that they stand in need of complementation by material transcendental conditions.

This chapter is divided into six sections: following these (1) introductory remarks I will provide (2) a brief characterization of three rival interpretations of the Second Analogy. I will then explain, at some length, (3) my own reading of four crucial passages from the proof of the Second Analogy. This will be followed by the largest section of this chapter: (4) an extended discussion of representative cases of each of the three rival interpretations. This

takes the form of an analysis of the claims and arguments of some of the better-known commentators. After a (5) summary of the findings of this chapter, I will conclude with a brief preview of the (6) new business to be undertaken in the next two chapters.

2. Three rival interpretations of the Second Analogy introduced

Kant's Second Analogy of Experience has received many different interpretations and there is no consensus as to what exactly he wants to prove in this famous passage of the First Critique. Likewise, where there is agreement about the aim of his proof there is disagreement about the question as to whether his proof is successful or not. Having studied a representative cross-section of the secondary literature on the Second Analogy, I have found that the different interpretations of it can be divided into 3 groups:

- a strong interpretation,
- a weak interpretation,
- a weaker-than-weak interpretation.

I will characterize them briefly; a fuller description will emerge in the detailed discussions to follow. The *strong interpretation* assumes that Kant wants to prove the strict causality *and* uniformity of the all changes in nature, i.e. that:

p = each single event has some one single cause
and that
q = like causes have like effects.

The *weak interpretation* assumes that Kant only wants to prove the first of these two claims. The advocates of this interpretation contend that Kant only wants to prove a general causal principle:

every event has some cause.

The weak interpretation is implied by the strong but the converse clearly does not hold: the fact that every event has a cause does not imply that the same events always have the same causes. The *weaker-than-weak interpretation*, which is a minority view³ and the view I shall defend in this chapter, does not assume that Kant wants to prove strictly necessary causal laws, and not even that he wants to defend the claim that the succession of the

³ I am not the only one to defend this reading which appears to have dropped out of the debate. However, as far as I am aware, the characterisation of this position as *weaker-than-weak* is my own.

events of the world is subject to a general causal principle. The weaker-than-weak interpretation makes the minimal claim that Kant only wants (1) to rescue the status of the concept of causality as an a priori concept and (2) to demonstrate that this concept is a necessary implication of the thought of an objective temporal sequence.

To state the weaker-than-weak interpretation in the language of events and causes is difficult, perhaps impossible, because it recognizes the transcendental status of the Second Analogy, i.e. that it says nothing about *specific* laws of nature and thus nothing about particular events and kinds of events. However, as a tentative formulation of the weaker-than-weak interpretation I offer the following:

The weaker-than-weak reading:

It is possible to individuate changes in the world as specifying particular, re-identifiable kinds of events only if it is possible to apply the concept of causality to changes in general, i.e. only if there are at least some changes that have causes and/or effects.

This does not assume that the sequence of the states of the world must be classifiable in re-identifiable kinds of events. The world might just be one complex “mega-event” without any recognizable subparts displaying uniformities as joints at which it could be conceptually cut. For all the pure understanding can know, the world might be an utterly unintelligible succession of infinitely different states of affairs.⁴ We all believe that this is not the case. We all believe far more than we can prove. However, the Second Analogy is not concerned with what we are *convinced* of on good but insufficient grounds, but what is *knowable a priori*.

This may suffice as a description of the three rival interpretations of the Second Analogy which I have distinguished. I will now give my interpretation of four crucial passages of the Second Analogy which, in my view, lend strong support to the interpretation I favour.

3. Four crucial passages of the Second Analogy

The main part of this chapter will be taken up with criticism of the views of others. Before I turn to that criticism I would like to briefly outline some key assumptions that inform my own reading of the Second Analogy. I would like to do this by way of an

⁴ Witness the epistemological “horror scenario” painted at B 123. We will come back to this in the next two chapters.

interpretation of four – in my view – crucial passages from the Second Analogy. They have been selected for the way in which they support my particular understanding of it.

3.1. A ship moving down a stream

The first of these passages is Kant's much-quoted example of a ship moving down a stream. It has the following wording:

For instance, I see a ship move down a stream. My perception of its lower position follows upon the perception of its position higher up in the stream, and it is impossible that in the apprehension of this appearance the ship should first be perceived lower down in the stream and afterwards higher up. The order in which the perceptions succeed one another in apprehension is in this instance determined, and to this order apprehension is bound down.⁵

It has generally escaped commentators' notice that this example is not an example of an event, but only of "something happening in time". Every event is a change, but not every change is an event. In my view, what is of interest in this example is not so much the moving of the ship as an event. The movement of the ship only serves to indicate the movement of the water in the river bed. It is quite significant that Kant chose the example of a flowing river because flowing is our principle metaphor for the passage of time. Elsewhere in the First Critique, referring to space and time as continuous quanta, Kant says:

Such magnitudes may also be called *flowing*, since the synthesis of productive imagination involved in their production is a progression in time, and the continuity of time is ordinarily designated by the term flowing or flowing away.⁶

I think that when considering the example of the ship moving down a stream we should be mindful of this passage for it seems to me that the objectivity of the flowing of time in general and not a particular re-identifiable type of event lies at the centre of Kant's example. Continuity describes a certain rule-governed type of change. The aspect of the uniformity of the course of nature, as opposed to the passage of time itself, is not considered at all in this much-quoted example. The many reasons one could mention as to why a ship might be moving down a stream, e.g. because the water it floats on is subject to the force of gravity or because it was loosened from its mooring place upstream etc., remain unmentioned. They simply are of no interest in the context of Kant's argument.

That the example of the ship moving *on*, or more accurately *with* the river, is intended to separate the aspect of a necessary connection of perceptions from the uniformity aspect of the course of nature can also be seen from a clue that Kant gives

5 CopR, B 237.

6 *ibid.*, B 212.

quite late in the Second Analogy. In a footnote to B 252 he states: "Thus, when a body moves uniformly, it does not in any way alter its state (of motion); that occurs only when its motion increases or diminishes." How central the concept of motion, which, in my view, the ship-example concentrates on exclusively, is to the transcendental philosophy as a whole is also evidenced by the following important passage, which I would like to quote in full despite its length:

Secondly, in order to exhibit *alteration* as the intuition corresponding to the concept of *causality*, we must take as our example motion, that is, alteration in space. Only in this way can we obtain the intuition of alterations, the possibility of which can never be comprehended through any pure understanding. For alteration is combination of contradictorily opposed determinations in the existence of one and the same thing. Now how it is possible that from a given state of a thing an opposite state should follow, not only cannot be conceived by reason without an example, but is actually incomprehensible to reason without intuition. The intuition required is the intuition of the movement of a point in space. The presence of the point in different locations (as a sequence of opposite determinations) is what alone first yields to us an intuition of alteration.⁷

If we relate this passage to the example of the ship moving downstream, we have an additional strong reason for thinking that in this example Kant is focussing exclusively on the necessity of the temporal succession of our perceptions of a change in general and not on a well-defined event and its causes or the laws that govern such an event, for he concentrates on the *movement* of the ship only. It serves as an example of "the movement of a point in space". I think this should be taken as a caution against interpretations that see the Second Analogy as being concerned with definite events and the laws governing their succession.⁸ The individual positions of the ship on the river are not connected to each other by a special causal law, they simply follow one another like the moments of flowing time.

3.2. The necessary presupposition of empirical laws

The second passage I would like to look at concerns the *purely hypothetical* character of the assumption of causal laws of nature. At B 246 we find the following argument:

7 CopR, B 291. See also the following, equally important passage: "Motion of an object in space does not belong to a pure science, and consequently not to geometry. For the fact that something is movable cannot be known a priori, but only through experience. Motion, however, considered as the describing of a space, is a pure act of the successive synthesis of the manifold in outer intuition in general by means of the productive imagination, and *belongs not only to geometry, but even to transcendental philosophy.*" (B 155, italics added).

8 See also "When something happens, *the mere coming to be*, apart from all question of *what* it is that has come to be, is already in itself a matter for enquiry. The transition from the not-being of a state to this state, even supposing that this state [as it occurs] in the [field of] appearance *exhibited no quality*, of itself demands investigation." (B 251)(italics added)

If, then, my perception is to contain knowledge of an event, of something as actually happening, it must be an empirical judgment in which we think the sequence as determined; that is, it presupposes another appearance in time, upon which it follows necessarily, according to a rule. ... Thus the relation of appearances (as possible perceptions) according to which the subsequent event, that which happens, is, as to its existence, necessarily determined in time by something preceding in conformity with a rule – in other words, the relation of cause to effect – is the condition of the objective validity of our empirical judgments, in respect of the series of perceptions, and so of their empirical truth... (original without italics)

That Kant here makes the necessity of a sequence of events dependent on the condition that we want to be able to regard it as such shows that he is interested, again, not in specific laws of nature but in the concept of causality as a necessary ingredient of our thoughts about objective changes.⁹

The principle of causality can only be proven because of its contribution to the possibility of experience, i.e. that we have to assume that the states of the world emerge in a strictly necessary temporal order if empirical knowledge of objective successions in time is to be conceivable. That the changing states of the world are themselves governed by special causal laws is something that we can not prove, though we must of course hope that this is the case. Otherwise, as Kant says, the transcendental principle could not reach “logical clarity” (B 241). Kant refers to as dogmatic, and therefore impossible, an unconditional proof that everything that happens follows from something according to a rule.¹⁰ The critical justification of the principle only shows that it is a necessary assumption implied by the claim that we experience an objective temporal order of events. But this proof can only establish the causal principle as a transcendental principle and not as an empirical one. Objective experience is often of purely contingent events, as for example when I see erratically blinking lights above the horizon of the sea at night. In that situation all I can do is make informed conjectures about the causes of these phenomena. Yet, although not all our perceptions are of things governed by laws known to us, in general, we have no problem in ordering them temporally.

3.3. The a priori consideration of the form of alterations

The third passage I would like to mention briefly in support of my claim that in the Second Analogy Kant is primarily interested in objective time-relations rather than in the changing states of objects in the empirical world is the following:

⁹ See also: “That everything which happens is *hypothetically* necessary is a principle which subordinates alteration in the world to a law, that is, to a rule of necessary existence, without which there would be nothing that could be entitled nature.” (A 228) (italics added)

¹⁰ See: “Had we attempted to prove these analogies dogmatically; had we, that is to say, attempted to show from concepts ... that every event presupposes something in the preceding state upon which it follows in conformity with a rule ... all our labour would have been wasted.” (B 264)

But apart from all question of what the content of the alteration, that is, what the state which is altered, may be, the form of every alteration, the condition under which, as a coming to be of another state, it can alone take place, and so the succession of the states themselves (*the happening*), can still be considered *a priori* according to the *law of causality and the conditions of time*. (B 253)

Here nature and her laws are expressly excluded from the consideration of changes in the empirical world. This exclusion of empirical laws rules out the strong *and* the weak interpretations I will analyse below. Again, in my view, the fact that all content is ignored in this consideration of causality shows that only the *formal* conditions of empirical truth are considered in the Second Analogy.

3.4. The structure of Kant's argument for the Second Analogy

In the concluding sentence of the Second Analogy of Experience Kant summarises his argument in defence of the causal principle in the following words:

In the same manner, therefore, in which time contains the sensible *a priori* condition of the possibility of a continuous advance of the existing to what follows, the understanding, by virtue of the unity of apperception, is the *a priori* condition of the possibility of a continuous determination of all positions for the appearances in this time, through the series of causes and effects, the former of which inevitably lead to the existence of the latter, and so render the empirical knowledge of the time-relations valid universally for all time, and therefore objectively valid. (B 256)

We can see from this summary that Kant's argument is based on the following steps:

- (1) Time is a sensible *a priori* condition of the possibility of experience.
- (2) The *determination* of time-positions depends on the understanding.
- (3) This determination applies only to the *form* of sensibility which establishes the framework for the contingent perceptions of actual experience.
- (4) All empirical *material* determination occurs in time and is thus also subject to the *formal* condition of this determination, regardless of any other conditions.
- (5) The determination of temporal positions in actual experience presupposes a non-empirical determination as the condition of its possibility.
- (6) The order of time cannot be read off the temporal events themselves because time itself cannot be perceived.
- (7) Because their order must be necessary if perceptions are to serve the purpose of knowledge acquisition, their relation in time cannot be thought of as determined unless time is regarded as a sequence of points that *necessarily* and thus *irreversibly* follow each other.
- (8) This *necessity* requires the application of a concept of the understanding.

(9) Objective empirical knowledge would therefore be impossible without the application of a priori concepts of the understanding.

(10) Prominent among these, and serving this function, is the category of causality.

In my attempts to understand the Second Analogy I have found few comments as helpful as Buchdahl's that Kant uses "empirical analogues in order to explain his transcendental contentions".¹¹ For it is initially confusing that while he means to deal only with the transcendental level, i.e. with the "conditions of the possibility of experience", he then goes into concrete examples. This is what has led so many commentators to assume that he wants to prove causality in the sense of special strictly necessary causal laws. However, how else *could* he have proceeded? The transcendental laws not only need the existence of actual laws of nature for their realization, their discussion would also be impossible without thought-experiments about real events. However, it is crucial to see that these concrete examples are used merely to bring out transcendental points.

3.5. Summary

Based on the argument I have presented above, I think we should read the Second Analogy of Experience as follows: Kant only wants to prove that, without the assumption that the advance of time is irreversible, i.e. that its moments follow each other with necessity, objective knowledge of a changing world is not possible. His proof takes as its basis the idea of a change in general. The rule of this necessary advance of time is the category of causality, which says that all alterations "take place in conformity with the law of the connection of cause and effect" (B 232). If this order of the understanding is to be applicable to the world of appearances specific causal laws of nature have to exist. This, however, is beyond what the understanding can know a priori, although it must, of course, be hoped that such laws exist. For without concrete causal laws of nature, the category of causality would not gain "logical clarity", as Kant claims at B 241: "Certainly, the logical clearness of this representation of a rule determining the series of events is possible only after we have employed it in experience." This indicates the essential dependence of this formal condition for the possibility of knowledge on a material counterpart.

Having outlined some key assumptions that inform my own interpretation of the Second Analogy, I shall now turn to the main business of this chapter. In the following section I shall analyse at some length examples of the three rival interpretations of the Second Analogy I distinguished and explained in section two of this chapter.

11 Buchdahl 1969a, p. 350. See also: "Moreover, we can see that Kant is using considerations belonging to these quite different cases [transcendental and physical necessity, MW] in order to let each of them support, and give meaning to, the other." *ibid.*, p. 654.

4. Examples of the three Rival Interpretations analysed

4.1. Introduction

By examining the objections that the critics I have chosen to engage with have raised against Kant's proof and their additional observations, I hope to further clarify Kant's main line of argument in the Second Analogy. I will first look at the interpretations of Schopenhauer and Strawson. Both authors ascribe the strong interpretation to Kant and reject it on the grounds that Kant offers insufficient arguments for it. I will then look at the interpretations of Friedman and Longuenesse. These two commentators also defend a strong interpretation of the Second Analogy. However, unlike Schopenhauer and Strawson, they believe that Kant's proof is (or can be so amended that it is) successful and can be defended against the criticism that has been levelled against it.

4.2. The strong interpretation

The *strong interpretation* of the Second Analogy of Experience assumes that Kant wants to prove the following claim (formulated in a different way to that provided earlier):

- (i) Every event has a cause and
- (ii) this cause is specific to its being the kind of event it is.

This interpretation assumes that Kant's aim was not only to refute Hume with regard to the origin of the concept of causality, i.e. Hume's claim that it is the product of mere habit,¹² but that he also wants to argue for the stronger claim that same causes have same effects. According to this reading, Kant's aim in the Second Analogy of Experience was to prove the necessity *and* the uniformity of all changes in the empirical world. While the commentators in this group agree on what Kant wants to prove, they disagree on whether Kant's proof is successful.

4.2.1. The strong interpretation rejected

The two commentators I will look at first, i.e. Schopenhauer and Strawson, come to the conclusion that Kant's proof does not succeed. I shall analyse Schopenhauer's criticism first.

12 "The necessary connexion betwixt causes and effects is the foundation of our inference from one to the other. The foundation of our inference is the transition arising from the accustom'd union. ... Upon the whole necessity is something, that exists in the mind, not in objects; ..." (Hume 1978, p. 165)

4.2.1.1. Schopenhauer's criticism of the Second Analogy

Schopenhauer criticises Kant for having made the opposite mistake to Hume. Whereas Hume had declared all succession to be a contingent *post hoc*, Kant had declared the events in *all* successions of events to be causally connected.¹³ If Kant were right there would thus be no room for the purely contingent succession of unrelated events. If we can read "all successions of events" as "the succession of events of all types", this makes Schopenhauer a proponent of the strong interpretation. Schopenhauer denies that there is an essential difference in Kant's two examples of the apprehension of a house and the observation of a ship floating on a stream. His central counter argument¹⁴ is the following: Kant has ignored the fact that the observer is also a physical object in space and time. According to Schopenhauer *both* examples are examples of an event, i.e. a change in the physical position of two bodies in space. In the example of the house that is being surveyed, it is the spatial relationship between the house and the eyeballs of the observer. If the observer were able to pull the ship upstream in the same way that she can move her eyeballs with the help of her eye muscles, the sequence of this event would also depend on her will. That this is not the case is due to a contingent fact, i.e. that the movement of the ship happens to lie outside the sphere of influence of the observer. According to Schopenhauer, however, such a difference, i.e. the merely contingent irreversibility of the order of perceptions, cannot establish an essential difference in the perception of things and events.

Moreover, Schopenhauer claims that Kant has overlooked the fact that the succession of the empirical intuition depends on the influence of other objects on the body of the observer. Because of this an objective succession can also be perceived if the objects causing the successive perceptions are not themselves connected causally. If Kant were right, i.e. if only causally connected appearances could be ordered objectively in time, it would not be possible, for example, to hear a melody; for nobody would maintain that the succession of its single tones is subject to the law of cause and effect. By declaring the intelligibility of the objective order of the sequence of events to be dependent on the concept of causality, according to Schopenhauer, Kant has committed the same mistake as Leibniz who intellectualized the forms of sensibility. If Kant's reasoning were sound, we would have to be omniscient, for we would need complete knowledge of all of the empirical laws of nature in order to discern the objective sequence of the

13 Schopenhauer 1957, p. 113.

14 *ibid.*, p. 112ff. (The translations are my own.)

world's events. "Kant has burdened the understanding with an impossible task only to have less need of sensibility."¹⁵ Finally, Schopenhauer accuses Kant of a circularity in his proof. He thinks that this is evidenced by the fact that, on the one hand, the objectivity of the succession is supposed to be determinable only from the necessity of the sequence of cause and effect, whereas, on the other hand, the empirical criterion for the decision as to which of two states of affairs is the cause and which is the effect, is meant to be merely their temporal succession.

4.2.1.2. Reply to Schopenhauer's criticism

In my view Schopenhauer misunderstands the intention of Kant's proof. Kant is not trying to prove an unbreakable causal nexus between the events of the world. As indicated above, I read him as only wanting to demonstrate that the concept of causality is a necessary conceptual implication of our perception of objective events. I do not think that Schopenhauer's counter-example establishes that the distinction between objective states of affairs and objective events is non-essential. His thought experiment can in fact be adapted to show that this is not the case:

Let us imagine that an observer is standing close to the front of a large house. In order to survey it in its entirety she needs to move her eyes from left to right. Now we imagine that she sees an aeroplane flying in the opposite direction to the movements of her eyes in the sky above the house. In such a case she is *simultaneously* aware of both the fact that the house is a non-changing object and of the movement of the plane in the sky above. In order to be aware of this difference she has to think of the one sequence of perceptions, i.e. the different parts of the house, and of the other, i.e. the plane flying above her, as essentially different in kind, and Kant's explanation makes it persuasively clear wherein this ability of an observer consists. As to Schopenhauer's criticism that Kant's argument is circular, Kant does indeed say two things which appear to expose him to this charge:

For time cannot be perceived in itself, and what precedes and what follows cannot, therefore, by relation to it, be empirically determined in the object. I am conscious only that my imagination sets the one state before and the other after, not that the one state precedes the other in the object. In other words, the *objective relation* of appearances that follow upon one another is not to be determined through mere perception. (B 234)

Here Kant is saying that the objective sequence of events is not determined by mere perception. However, later on in the text of the Second Analogy he says:

¹⁵ *ibid.*, p. 115.

The sequence in time is thus the sole empirical criterion of an effect in its relation to the causality of the cause which precedes it. (B 249)

Now, if the first quotation could only be read as Kant saying that perception leaves the objective sequence of events undetermined, Schopenhauer's criticism would be valid. However, I do not think the text needs to be read like that. In fact, I think it would be wrong to do so. Kant is saying here that objectivity is not established through *mere* perception, that objectivity is always arrived at via the conceptual element necessary for all experience. As the second quotation makes clear, Kant is not denying that perception makes an essential contribution to experience and has a crucial and irreplaceable role to play. Whether representations "follow one another in the object", however, is something that cannot be decided by perception alone. It calls for "reflection", i.e. the use of concepts. Read in this way the two passages entail no contradiction. I shall now turn to Strawson's interpretation of the Second Analogy.

4.2.1.3. Strawson's criticism of the Second Analogy

That Strawson belongs to the group of commentators who assume that Kant wants to prove a universal law of causality can be seen from the end of his discussion of the Second Analogy where he states:

Kant argued, as we have seen, by a short, invalid step, for the conclusion that the Law of Universal Causality held for all possible experience, i.e. for the conclusion, that there existed strictly sufficient conditions for absolutely every change that we can take cognizance of.¹⁶

Strawson criticises Kant for confusing conceptual and causal necessity at the crucial stage of the argument of the Second Analogy: "In fact, he not only shifts the application of the word 'necessary', but also changes its sense, substituting one type of necessity for another."¹⁷ If one were to assume¹⁸ that:

- (1) A and B are two objective states of affairs,
- (2) A precedes B,
- (3) *a* is the perception of A and *b* the perception of B,
- (4) there is no difference in the way *a* causally depends on A and *b* on B,¹⁹

then it would follow with logical necessity that *a* precedes *b*. However, while causality would play a role in this example, it would do so only in the causal chain between the

16 Strawson 1976, p. 146. I think we can understand "every change" as "every kind of change".

17 *ibid.*, p. 137f.

18 *ibid.*, p. 136.

19 Strawson gives an example (cf. p. 135) of a different type of causal dependence: If I perceive an event via different senses, through hearing and sight, as when in a thunderstorm I first see the lightning and then – given a sufficient distance to the place of the actual physical event that causes the phenomena of light and sound – hear the pressure wave as thunder. Strawson has taken this example from Russell. See the chapter on Kant in Russell's *History of Western Philosophy*.

event and its perception, and Kant is interested in the causal link between events themselves. Strawson contends that Kant has offered this logical necessity as a real necessity, i.e. that he has confused the real necessity that Strawson thinks Kant wants to prove with a merely logical one. He accuses Kant of equating “a conceptual necessity based on the fact of a change” with a “causal necessity of that very change”.²⁰

4.2.1.4. Reply to Strawson’s criticism

If this were Kant’s argument one would have to agree with Strawson that this is an example of a “non-sequitur of numbing grossness”,²¹ however, I do not think that Strawson does justice to Kant’s argument. The main problem seems to me to be the fact that Strawson argues from a transcendental realist position whereas Kant does not try to solve the problem of how we find our way in an objective world.²² Kant addresses himself to the more fundamental question of what is implied in the idea of an objective sequence *in general* and not to the empirical problem of how we manage to order the perceptions of a world presupposed as transcendently real. He does not assume a transcendently real world and then inquire into the causal relationship between that world and our perceptions of it.²³ He enquires into the transcendental conceptual conditions of experience in general, into what experience *essentially* is. As we saw in the close reading of four passages from Kant’s main argument, he claims that the concept of an objective event implies that our perceptions of it are “tied down”, i.e. that they occur necessarily in the sequence in which they occur. Transcendental realism would be one way of accounting for that. But Kant thinks it is not compatible with the robust empirical realism he wants first and foremost to defend. I will return to this issue in the last chapter of this dissertation. For now, I conclude that Strawson and Schopenhauer both misunderstood Kant’s intention. I shall now look at two other versions of the strong interpretations of the Second Analogy. The next two commentators whose views I have chosen to analyse, Friedman and Longuenesse, accept that Kant’s proof is (or can be so amended that it is)

20 *ibid.*, p. 138.

21 *ibid.*, p. 137. An earlier critic of Kant, Arthur Lovejoy, has criticised him in strikingly similar terms. According to Lovejoy the argument of the Second Analogy is “one of the most spectacular examples of the non-sequitur which are to be found in the history of philosophy”. He accuses Kant of confusing “the *irreversibility* of the sequence of my perceptions in a single instance of a phenomenon” (p. 300, emphasis in the original) with the “necessary *uniformity* of the sequence of my perceptions in *repeated instances* of a given *kind* of phenomenon”. (Lovejoy 1967, p. 301, emphasis in the original).

22 “For the world to be conceived as objective, it must be possible to distinguish between the order of perceptions occurring in one experiential route through it and the order and relation which the objective constituents of the world independently possess.” (Strawson 1976, p. 123)

23 On this question I agree with Longuenesse, who points out that Kant’s account of perception is phenomenological and not causal. See Longuenesse 2006, p. 165.

successful. As follows from the logic of this chapter and to anticipate my result in the next section: I will disagree with both of these interpretations also.

4.2.2. The strong interpretation defended

Both Friedman and Longuenesse defend an interpretation of the Second Analogy, according to which it offers conclusive proof (or is a first crucial step towards a proof) of the existence of strictly necessary special causal laws, i.e. that same causes have same effects. They both find Kant's proof persuasive and they are willing to defend it against Kant's contemporary critics. I shall first analyse the arguments Friedman advances in his article "Causal laws and the foundations of natural science".²⁴

4.2.2.1. Friedman's interpretation of the Second Analogy

Having specified the reasons why one might favour an interpretation of Kant's epistemology that strictly separates the individual empirical causal laws from the transcendental principle of causality, Friedman goes on to detail the reasons for his own divergent view. He regards such an interpretation as untenable because it does not cohere with a lot of what Kant says in the *Transcendental Analytic*.

He begins by asking the reader to consider the transcendental principle of causality itself, which he takes to be: every event B has a cause A. To say of an event B that it has a cause A amounts to saying that B and A are related by a uniform causal law. And, for Friedman, this entails the claim that the universal causal principle "must assert the existence of particular causal laws or uniformities as well".²⁵ Citing a passage from the *Postulates of Empirical Thought* (B 279), which he refers to in support of his reading, he states the central claim of his article, that for Kant "...the possibility of particular causal laws is somehow grounded in the transcendental principle."²⁶ The remainder of his article tries to develop a clearer idea of how this "grounding" of empirical laws might best be understood. According to Friedman, it is in virtue of this grounding alone that empirical laws can have necessity and "a more than merely inductive status."²⁷ If empirical uniformities are to become true laws of nature they must be subsumed under the *a priori* concept of causality, "whereupon they become necessary and strictly universal".²⁸ Commenting on the passage from the *Prolegomena*, in which Kant deals with the

24 In Guyer (ed.) 1992.

25 *ibid.*, p. 171.

26 *ibid.*, p. 171.

27 *ibid.*, p. 172.

28 *ibid.*, p. 173.

difference between the subjective and objective connection of perceptions using the much-quoted example of a stone being warmed by the sun,²⁹ Friedman arrives at the conclusion that the causal principle makes experience possible “by somehow injecting necessity (and thus strict universality) into particular causal laws”.³⁰

Rather than following more of the stages in Friedman’s textually very rich argument, I would now like to proceed directly to his response to the problem of how the empirical laws are grounded a priori in the transcendental laws of the understanding. In the penultimate section of his article Friedman looks at the relevance of Kant’s arguments in the *Metaphysical Foundations of Natural Science* for his interpretation of the relationship between empirical and transcendental laws. Preparing the answer to the central question addressed by his article, he points out that in Kant we find a hierarchy of “progressively more concrete and empirical instantiations or realizations of the transcendental principles” and that this hierarchy consists of “progressively more concrete and empirical natures or worlds”.³¹ The most abstract of these worlds is that described by the transcendental concept of a nature in general. This world consists of interacting spatial substances. The next more concrete world is the world as it is conceived by the metaphysical principles of pure natural science. This world consists of lifeless and purely material substances, the interaction of which is governed by the two forces of attraction and repulsion described by Newton’s laws of motion. The next, again more concrete world, is the world as described by Newton’s theory of gravity. It is a world of bodies with a certain mass. Their interaction is governed by the law of universal gravitation; and so on. Having reached the culminating point of his argument, Friedman’s then provides the answer to the question as to how the a priori grounding postulated by him earlier is realised:

The notion of an a priori grounding is then expressed by the idea that, although purely empirical data play a necessary and unavoidable role in this procedure, the framing or nesting of such data within the transcendental concept of a nature in general is to result – at least in principle – in a unique and determinate description of the empirical world that thereby acquires a more than merely empirical status.³²

This, then, is the gist of Friedman’s article. I shall now comment on the individual points raised in it in the order I have presented them.

29 See Proleg. § 29.

30 Friedman 1992a, p. 174.

31 *ibid.*, p. 185.

32 *ibid.*, p. 186. It strikes me as odd to regret the fact that the role that empirical data play in this procedure is “unavoidable”. Why should one regret that they have to be considered? Is not the whole point of this procedure to ground *them*? I think that this choice of phrase bodes ill for the argument to follow.

4.2.2.2. Reply to Friedman's interpretation

The problems I find in Friedman's interpretation begin right at its outset. In my view it is impossible to accept the statement "Every event B has a cause A" as a possible rendering of the transcendental principle of causality. The actual wording of this principle, the Second Analogy of Experience, which bears the subtitle *Principle of Succession in Time, in accordance with the Law of Causality*, is:

All alterations take place in conformity with the law of the connection of cause and effect.

In the first edition of the Critique of Pure Reason the principle was called the *Principle of Production*. It had the following wording:

Everything that happens, that is, begins to be, presupposes something upon which it follows according to a rule.

Neither of these two wordings refers to specific events that might be individuated as events of a given type. The transcendental principle of causality is neither as definite as Friedman assumes, nor could it refer to individual events without ceasing to be a *transcendental* principle. In my view, the main problem with Friedman's exposition is that he does not pay due attention to the difference that exists between the category of causality, which for Kant is one of the conceptual conditions for the possibility of experience, and causal necessity as a feature of empirical laws.

Kant clarifies this distinction in § 19 of the deduction of the categories where he gives a definition of a judgement. Distinguishing it from the relationship that modes of knowledge (concepts or other judgements) might have in the reproductive imagination, which can yield only subjective validity, he characterizes it as "nothing but the manner in which given modes of knowledge are brought to the objective unity of apperception". The purpose of the copula "is" is to distinguish the objective from the merely subjective unity of apperception. He then makes the point that this necessary unity also applies if the judgement is empirical and contingent, as in "Bodies are heavy". Kant then makes the following all-important observation:

I do not here assert that these representations necessarily belong to one another in the empirical intuition, but that they belong to one another in virtue of the necessary unity of apperception in the synthesis of intuitions, that is, according to principles of the objective determination of all representations, in so far as knowledge can be acquired by means of these representations...³³

33 CopR, B 141/2.

Kant clearly distinguishes here between two types of necessity: that of the unity of apperception and that existing between the representations in empirical intuition. If I want to have knowledge of the objective sequence of causally unconnected events (as in Schopenhauer's melody example) necessity also has a role to play: it brings this perception to the unity of apperception, which alone can result in an objective judgement.

For a correct interpretation of the Second Analogy, it is crucial to realize that it concerns itself exclusively with the necessity of the synthesis of intuitions, and *not* with the necessity that may or may not exist between the events apprehended. In the important footnote to B 202 Kant refers to this crucial difference as that between "the *physical* connection of the appearances with one another, and their *metaphysical* connection in the a priori faculty of knowledge" (italics added). That physical connections cannot be dealt with in a transcendental investigation is emphasized by Kant in the proof of the Anticipations of Perception where he says: "But the causality of an alteration in general, presupposing, as it does, empirical principles, lies altogether outside the limits of a transcendental philosophy".³⁴ This sentence might initially strike us as surprising. Does the Second Analogy not deal with the causality of alterations? It does not deal with empirical alterations *themselves*: only with *the way they happen*, i.e. "in conformity with the law of the connection of cause and effect". Friedman's rephrasing of the Second Analogy, *Every event B has a cause A*, refers to concrete physical events which presuppose empirical principles, whereas Kant's transcendental principle of causality does not.

In my view Friedman asks the wrong question when he wonders how the transcendental principles "inject necessity into empirical laws of nature so as to secure them a more than merely inductive status".³⁵ I do not think that it is an "unfortunate fact"³⁶ that Kant does not say anything to explain this. Instead, Kant's utter silence on this matter would appear to me to present a strong challenge to Friedman's and other strong readings of the Second Analogy. I think that the passages quoted thus far show that Kant would have denied that this question can be answered at all. Thus he says in a rarely quoted yet highly pertinent sentence from the *Methodenlehre*: that "...we cannot form the least conception *a priori* of the possibility of dynamical connection", and that "the categories of the pure understanding do not suffice for devising any such conception, but

34 CopR, B 213. See also the following passage, relevant in this context: "*A priori* modes of knowledge are entitled pure when there is no admixture of anything empirical. Thus, for instance, the proposition, 'every alteration has its cause', while an *a priori* proposition, is not a pure proposition, because alteration is a concept which can be derived only from experience." *ibid.*, B 3.

35 Friedman 1992a, p. 175.

36 *ibid.*

only for apprehending it when met with in experience," (B798) I think that this statement provides clear and incontrovertible evidence for the fact that Kant did not believe that the causality of physical events could be grounded in the metaphysical causality of the pure understanding.

When Friedman contends that the transcendental principles of the understanding are "established entirely independent of all perception and experience"³⁷ he overlooks the fact that for Kant the transcendental principle of causality "...has the peculiar character that it makes possible the very experience which is its own ground of proof, and that in this experience it must always itself be presupposed".³⁸ The principle of causality is made *dependent* on experience in a very real sense here.

4.2.2.3. Longuenesse's interpretation

The most recent defence of a strong interpretation of the Second Analogy that has come to my attention was advanced by Beatrice Longuenesse. She develops it at chapter-length³⁹ in her recent *Kant on the Human Standpoint*. How strong her interpretation of the Second Analogy is, according to the classification I suggest at the beginning of this chapter, can be seen from the fact that she attributes to Kant the "radical (transcendental) point that in the world of appearances, all changes of states do fall under strictly universal causal laws."⁴⁰ Later in her exposition we find an equally strong way of formulating the principle. She declares that she wants to defend the Second Analogy not as an epistemic principle, but as an "ontological principle, universally true of happenings themselves."⁴¹

Longuenesse begins her discussion with a classification of the different schools of interpretation of the Second Analogy. While she sees agreement about the basic logic of Kant's argument, namely that the concept of cause is "presupposed in the very representation of any particular objective succession of states of a thing",⁴² rather than being derived from experience, as Hume had claimed, she deplores that little else has been agreed on. In particular, she highlights the persisting disagreements concerning two separate problems: (1) the problem of what is meant by "objective succession", whether this refers (a) to the objects of our ordinary experience or (b) to a scientific description of the world; and (2) the problem of what the concept of a cause involves, i.e. whether it is

37 *ibid.*, p. 174.

38 CopR, B 765.

39 Chapter 6, "Kant on Causality: What was he trying to prove?" (p. 143-183).

40 *ibid.*, p. 145. See also page 170: "...; of every individual event he intends to assert that it occurs in accordance with a strictly universal causal law."

41 *ibid.*, p. 168.

42 *ibid.*, p. 143.

to be understood (a) in a loose sense, which does not imply strictly universal necessary laws, or (b) in a strict sense that does imply such laws. She classifies the two interpretations that have dominated the recent debate according to their better-known advocates as the Buchdahl/Allison interpretation⁴³, which favours answer (a) to problems (1) and (2), and the Friedman interpretation, which argues for answer (b) to both problems. She herself takes up a position that breaks with this schema of interpretation. She defends answer (a) to problem (1) and answer (b) to problem (2), i.e. she presents the view that the Second Analogy is meant to apply to the changes of the objects of ordinary experience and that such changes can only be perceived under the presupposition that they are subject to strictly universal causal laws.

Longuenesse's argument unfolds in three main stages. She first considers Kant's way of formulating the problem of causality. She argues that the best way to approach this is via Kant's conception of hypothetical judgements and hypothetical syllogisms. In particular, she is intrigued by Kant's use of the verb "to posit" in his formulation of the causal principle, and shows that Kant could well have derived it from Christian Wolf's way of describing hypothetical judgements.

In section two of her chapter Longuenesse analyses the different stages of Kant's proof in the Second Analogy. Here again she places particular emphasis on hypothetical judgements, claiming that they are "an indispensable foundation for understanding Kant's argument on the conditions of time perception."⁴⁴ In this section of her chapter Longuenesse sets out six steps which, she suggests, underlie the five different expositions Kant gives in his proof of the principle of causality. The crucial steps for her central argument are steps 5 and 6, which read as follows:

5. Therefore, we perceive a succession as an objective succession (a change of states in an object) just in case we presuppose a preceding state upon which it follows according to a rule (...).

6. Therefore, every objective succession (every event) presupposes something upon which it follows according to a rule (...).

She concedes that there is "an obvious difficulty" in the move from (5) to (6).⁴⁵ In the remainder of section two she scrutinizes Kant's arguments to examine whether, and if so how, he justifies this move. At the end of part one of her chapter Longuenesse states that

43 *ibid.*, p. 144. I do not agree with Longuenesse that Buchdahl and Allison can be said to defend the same position. Neither defends a strong reading but Buchdahl's is weaker than Allison's. I will look at both of these critics in the remainder of this chapter.

44 *ibid.*, p. 146.

45 *ibid.*, p. 159.

she intends to analyse Kant's arguments in order to identify his answers to the three questions as to (1) whether we assume the truth of the causal principle, (2) whether we are entitled to do so and (3) whether this assumption justifies the assertion of individual causal statements in specific contexts. After a lengthy discussion, aspects of which I will return to briefly later, she reaches the conclusion that questions one and two can be answered in the affirmative. However, with regard to the third question she states:

And finally, to the third question – does the supposition warrant the transition from judgement of perception to judgement of experience, that is, from the statement of mere regularities to that of law-like connections? – we would definitely have to say, no, it does not.⁴⁶

However, as indicated at the outset, Longuenesse is convinced that Kant wants to prove that all changes in the world are governed by strictly necessary causal laws. So how can this “apparent discrepancy”⁴⁷ between what Longuenesse's Kant wants and what he manages to prove be resolved?⁴⁸ The logic of her argument and her interpretation force Longuenesse to conclude that Kant's argument “needs repairing, or at the very least disambiguating.”⁴⁹ She considers briefly “that Kant was simply mistaken about his own proof”,⁵⁰ however, she then goes on to claim that Kant has, in fact, an answer to the difficulties she claims to have found in his proof. While the discursive model that she develops at such length in section two of her chapter and puts to work in the reconstruction of Kant's proof ultimately does *not* suffice to establish strictly necessary causal laws, she nevertheless sees a way out of this impasse: the discursive model can be completed⁵¹ via an appeal to the pure intuition of time (and space).⁵² She develops the details of this completion in the third and final section of her chapter, which I will now turn to.

In general, according to Longuenesse, what provides Kant⁵³ with the “missing link”⁵⁴ that will transform the weak interpretation, characterised by step (5), into the strong interpretation, captured by step (6) quoted above, is the fact that the position of every event is completely determined in unified and continuous time. More specifically,

46 *ibid.*, p. 169.

47 *ibid.*, p. 147.

48 Cf. p. 171: “He wanted his argument in the Second Analogy to prove an objective principle asserting the existence of strictly necessary causal laws in nature” but all he was able to prove was “a principle asserting the existence of some degree of objective regularity in nature as a condition of possibility of our experiencing events.”

49 *ibid.*, p. 170.

50 *ibid.*, p. 171.

51 See *ibid.*, p. 172.

52 This signals a change in her views. In the closing remarks to her 1998 *Kant and the Capacity to Judge* she counts among the “unresolved difficulties” (p. 398) Kant's “apparent inference from the continuity of the forms of intuition, space and time, to the continuity of change in nature” (p. 399).

53 This is the way Longuenesse puts it. However, I do not think that Kant is looking for this link. More accurately, she would have had to say that *she* thinks it enables her to complete Kant's inadequate proof.

54 *ibid.*, p. 172.

Longuenesse draws attention to Kant's argument, developed towards the end of the Second Analogy, that the realisation of an effect does not occur instantly, but over time. The correlation between cause and effect obtains uninterruptedly "and this preservation through time of any correlation that actually obtains is what makes possible the empirical individuation of states of affairs and events in time."⁵⁵ Now, as *existence at all times* is Kant's description of the schema of necessity, we must look for something, of which such continued existence can be predicated. According to Longuenesse, the only candidates for this are "the law-like correlations between states of affairs and events preserved through time."⁵⁶ They realize the continuous a priori intuition empirically. Longuenesse reaches a preliminary conclusion of her argument for a strong interpretation of the Second Analogy with the following claim:

Because it has to be thought as thus preserved through time (for the unity of time to be empirically realized), the connection between an event and 'what precedes it, according to a rule' should be thought as a necessary connection.⁵⁷

We may note at this point that the language of her claim is quite careful. It does not at all read like the conclusive proof of a "radical ontological principle", albeit of appearances, which we were led to expect. Instead we are merely invited to share Longuenesse's view: the connection "should be thought" as necessary. From the above it is clear that I agree with Longuenesse that empirical laws are among the transcendental conditions, as she goes on to point out in support of her argument. It is a central claim of the No-priority thesis that they rank among the conditions for the possibility of empirical knowledge, for the formal transcendental laws can only be realized in empirical laws, as Kant makes clear, when he says: "For only in appearances can we empirically cognize this continuity in the connection of times."⁵⁸ But the No-priority thesis maintains also that this need⁵⁹ does not provide the grounds for the proof that these laws, which are only empirically confirmed, are strictly necessary. Before I explain why I think that we should

55 *ibid.*, p. 173.

56 *ibid.* p. 173. This argument from the need to assume the permanent existence of law-like correlations sounds more like an argument for Platonism, for laws are not things. (However, see her reference to "necessary objects".) If the empirical world depends for its structure on the fact that its processes are subject to such laws then the law-governedness of the empirical world is possible only by and evidence for the fact that it somehow participates in these relations of universals (as in metal + heat = expansion).

57 *ibid.*, p. 173.

58 See A 199. This shows, incidentally, that the argument that Longuenesse thinks is needed to complete Kant's proof of the Second Analogy is already present in Kant. But I would contend that he does not see it as a proof of a strong interpretation of the principle of causality. I will say more about this in the main text.

59 By confusing a need with a proof, Longuenesse makes a mistake that Buchdahl had already warned against in his *Metaphysics and the Philosophy of Science*. He says there that a need "cannot yield any 'proofs' of empirical law-likeness" (Buchdahl 1969, p. 663).

not accept her conclusion, I will first relate important further points Longuenesse makes in support of her argument.

By way of clarification she points out that “the complete determination of the spatio-temporal position of objects and their states”⁶⁰ is possible only via the law-governed correlation of their states, and that we are justified in assuming that such a complete determination of their spatiotemporal position does, in fact, obtain because they belong to one space and one time. Now the crucial question is: does this justify the move from premise (5) to (6) quoted above? Longuenesse concedes that it is not justified in particular cases, for it always remains possible to mistake what is merely a regularity for a necessary connection. However, according to Longuenesse, this concession does not weaken the proof of the general ontological principle she sets out to prove, as she concludes, now less tentatively:

But what the principle does tell us is that all events do obey such necessary connections, because without such connections there would be no unity or continuity of empirically real time, and no complete determination of empirical events.⁶¹

This may suffice as a summary of Longuenesse’s defence of a strong interpretation of Kant’s Second Analogy of Experience. I will now detail why I do not find it convincing.

4.2.2.4. Reply to Longuenesse’s interpretation

Before I comment on the crucial argument in section three of her chapter outlined above, as promised earlier, I would like to draw attention to two problems I found in the exposition of section two of her chapter. (1) In her reconstruction of Kant’s arguments pertaining to the order-determinateness of perceptions and objective succession, Longuenesse states the following:

But for Kant the features of our ideas (representations), and especially the modal characteristics of their temporal relations, depend themselves upon our mental acts of relating them to objects they are the perceptions of.⁶²

A little later we find:

We take the succession of our representations to be order-indeterminate or order-determinate depending on whether we are led to interpret them as representing an objective simultaneity or an objective succession. So the order we introduce into the subjective succession of our representations depends on how we interpret the objective order we take them to be the representations of.”⁶³

60 *ibid.*, p. 175.

61 *ibid.*

62 *ibid.*, p. 163. See also: “So Kant’s point is that the mental activity of relating perceptions to objects they are perceptions of, just is what generates (...) our representation of objective correlations in time.” (p. 162)

63 *ibid.*, p. 163.

Both of these claims seem problematic to me. I do not think it reflects Kant's theory accurately to let the "modal characteristics" of the temporal order of our representations depend on our mental acts. It seems to me that this is how Hume interprets necessity, i.e. maintaining that "necessity is something that exists in the mind, not in objects".⁶⁴ Moreover, this way of describing Kant's argument is in fact damaging to Longuenesse's own aim to show that the Second Analogy establishes not an epistemological, but an ontological principle about "happenings themselves".⁶⁵ Likewise, I do not think one can say that for Kant the order of the subjective succession of our perceptions is "introduced" by us. This interpretation has a very subjectivist ring to it which seems to me to contradict Kant's theory. In the context of the ship example of the Second Analogy he says that, unlike in the case of the perception of a house, the "order in which the perceptions succeed one another in apprehension is in this instance determined, and to this order apprehension is bound down."⁶⁶ If our apprehension of an objective succession is "bound down" then there would appear to be no room left for us to introduce any order. The order for Kant seems to originate in the object, and not in mental acts of transcendental subjects, which, by relating their representations to objects, Longuenesse credits with the ability of conferring on them "a character which they would not otherwise have (their temporal order-determinateness...)".⁶⁷ According to Longuenesse's reading of Kant what "makes our successive perception in apprehension the perception of an objective succession is the awareness of its temporal order-determinateness".⁶⁸ However, it seems to me that what makes the perception one of an objective succession is not any awareness on our part but the fact that our apprehension is "bound down" by temporal reality. The irreversibility of objective perceptions does not depend on us, for our apprehension is bound down. Longuenesse's way of explaining the issue makes it sound as though, on the contrary, the apprehension has the power to bind down the object to its form. For her, contrary to the No-priority-thesis, transcendental selves appear to have priority over their objects.⁶⁹ Against this interpretation I would maintain that the category

64 Hume, p. 165.

65 *ibid.*, p. 168.

66 CopR, B 238.

67 *ibid.*, p. 164.

68 *ibid.*, p. 165.

69 See her emphatic reference to them in the conclusion of the section on the Analogies in her 1998 *Kant and the Capacity to Judge*: "And this is how the astonishing edifice of Kant's Analogies of Experience comes to conclusion: by the location of 'us' in the empirically given world. An 'Us' that is ... both passive (...) and active (...). And as such the authors of the representation of the very world in which 'we' locate 'ourselves': transcendental subjects." (p. 393)

of causality does not introduce any order but only serves to understand causal order, “where met with in experience” (B 798), as Kant says in the *Methodenlehre*.

I think that the main problem of Longuenesse’s entire approach is that, like Friedman,⁷⁰ she all too quickly equates “things that happen” with events. Thus she says:

In this sense, to say that perceiving that something happens is presupposing something else upon which it follows according to a rule is also to say that confirming our perception as the perception of an *actual event*, or *confirming that something has happened*, is determining the rule, or set of rules, which warrants asserting that what happened is actually the event we perceived.⁷¹

As I argued at the outset of this chapter, to equate, as Longuenesse seems to do here, an event and something that happens, differentiated by Kant as an *Ereignis* and a mere *Geschehen*, is over-hasty. To do so is a failure to notice that we may be able to confirm that something happened *without* being able to individuate what we witnessed. We can and do experience more than we can conceptualize or explain. A more famous case is the double slits experiment of quantum theory.⁷² However, more immediate examples also exist. The weather is not fully predictable because weather systems display chaotic features. We cannot claim that everything experiencable is also explainable. The intelligibility of the world, which would be required for this, will be the concern of the next two chapters.

I would now like to examine Longuenesse’s argument in section three of her chapter, which, in her view, establishes the strong interpretation of Kant’s Second Analogy. We saw earlier that Longuenesse claims that the missing link required to warrant the assertion of the strong interpretation of the Second Analogy is provided by the argument that without strictly necessary causal laws there would be no unitary, continuous empirically real time, “and no complete determination of empirical events.”⁷³ I think that this argument does not suffice to prove the result Longuenesse wishes it to establish and believe that it does not do so for the following reasons. First, for the empirical unity of time it would suffice if *most* or a very large number of events were governed by strictly necessary causal laws. Second, I do not think that one can just assume as a matter of fact that all empirical events are completely determined. By simply assuming this in the context of her argument Longuenesse is in fact begging the question: *if* the ontological

70 See her praise of his analysis in the footnote on p. 171.

71 *ibid.*, 168. italics added.

72 See Polkinghorne, *Quantum Theory*, p. 22. We can conduct this experiment and describe our findings, but we do not really understand it. As Polkinghorne puts it, “quantum theory is a tremendous tale of success, perhaps the greatest success story in the history of physical science. Yet a profound paradox remains. Despite the physicists’ ability to do the calculations, they still do not understand the theory.” (p. 40) That necessity need not imply the uniformity and intelligibility we associate with natural laws is interestingly discussed in A. S. Mason, “Plato on Necessity and Chaos”. *Philosophical Studies* (2006), pp. 283-298.

73 Longuenesse 2006, p. 175.

principle she tries to establish is valid, then the world is fully intelligible, at least in principle. As then for everything that happens there is a law that governs it and thus also an explanation. But she is only in the process of arguing for this principle and has not established it as yet. Longuenesse cannot therefore make use of the principle as part of an argument in support of it. That she does allow that we could have experience of objects, as opposed to events that elude our ability to understand them, is evidenced by a thought experiment she presents in section two of her chapter. She imagines the possibility that one might find something that looks just like a warm stone, but that one would be unable to account for its temperature, for none of the causes that usually explain why a stone is warm, i.e. strong sunlight, a warm spring nearby or somebody who could have lit a fire, are present. In such a case one might have to conclude that one may have encountered an “unknown material from outer space or a particularly weird animal.”⁷⁴

I think that what she allows for objects she should also allow for processes, i.e. that we could experience “something that happens” without being in a position to ascertain what particular kind of event we are witnessing. Third, empirical concepts, in which we have to formulate special laws, are undefinable for Kant.⁷⁵ To make natural laws the substance of the world, as Longuenesse suggests, appears to presuppose an Aristotelianism which, as I understand it, cannot be reconciled with Kant’s theory of empirical concepts. I will come back to this issue in chapter 4, where I briefly examine Kant’s theory of definition. Finally, and most importantly, Longuenesse seems here to ignore the distinction between mathematical and dynamical, i.e. between constitutive and merely regulative principles.⁷⁶ The principles that are warranted by an appeal to pure intuitions of space and time are the Axioms of Intuition and the Anticipations of Perception. With the Analogies of Experience we step from the mathematical, constitutive principles into the dynamical, merely regulative principles.⁷⁷ The causal structure of the empirical world, which is determined by existing, real things, cannot be proven by an appeal to the structure of the forms of intuition, for “existence cannot be constructed”.⁷⁸ Discontinuities can and do occur in continuous time. Continuous quantitative changes frequently lead to discontinuous qualitative changes: I blow up a balloon and then it bursts. Water gets

74 *ibid.*, p. 168.

75 Compare CopR, B 755f.

76 See CopR, B 201f.

77 That Kant describes these principles in the Appendix to the Transcendental Dialectic (at B692) as constitutive for the possibility experience, does not seem to me to be a challenge to my interpretation. I think the NPT can accommodate Kant’s proviso by its distinction between physical and metaphysical connections (see B 142).

78 CopR, B 222.

hotter until it boils and evaporates. One might of course argue that these too are changes in the state of objects, because they have not disappeared without a trace. When a soap bubble bursts, the molecules that formed it, like the evaporating hot water, do not vanish. However, modern science tells us that such things do happen in the microcosm studied by particle physics.⁷⁹ Objects appear or disappear because energy is transformed into matter, or vice versa. Although not changes of the state of an object, such changes are nevertheless covered by the Second Analogy of Experience. I think these examples show that Longuenesse's interpretation of the Second Analogy which focuses "on successions of states rather than successions of events"⁸⁰ narrows its application unnecessarily; for the disappearing of an atomic particle is an event, yet it would seem difficult to interpret it as the change of the state of an object.

Longuenesse does not show *how* exactly the discursivity of the mind, on the development of which she spends such a substantial part of her chapter, although not proving it by itself, nevertheless lends support to her strong interpretation of the Second Analogy. She only claims *that* it does. Whatever one may think about the potential success of such a demonstration, Kant himself was opposed to such an attempt as is evidenced by the following passage from the *Methodenlehre*:

The great success which attends reason in its mathematical employment quite naturally gives rise to the expectation that it, or at any rate its method, will have the same success in other fields as in that of quantity. For this method has the advantage of being able to realise all its concepts in intuitions, which it can provide a priori, and by which it becomes, so to speak, master of nature; whereas pure philosophy is all at sea when it seeks through a priori discursive concepts to obtain insight with regard to the natural world, being unable to intuit a priori (and thereby to confirm) their reality.⁸¹

According to Kant the mind is not the "master of nature" and nature is not constrained by it. Longuenesse is looking for an "insight with regard to the natural world". We saw that she wants to establish an ontological principle for a world of appearances for that is what a strong interpretation of the Second Analogy would indeed amount to. However, as I think we can see from the above quotation, Kant thought that such an insight is unattainable. Now Kant does famously claim that the understanding prescribes laws to nature (B 160). However, two things need to be kept in mind for a proper understanding of this claim: (1) this nature is not to be identified with nature in the sense of the essence

⁷⁹ See Polkinghorne, p. 74. In a quantum field fluctuations "continually take place, in the course of which transient 'particles' appear and disappear."

⁸⁰ Longuenesse 2006, footnote to p. 144.

⁸¹ CopR, B 753.

of an individual thing or process⁸² and (2) such law-giving presupposes that there are special empirical laws that *allow* for this. Thus at B 185 Kant says:

As the grounds of an a priori necessary unity that has its source in the necessary combination of all consciousness in one original apperception, they [the categories, MW] serve only to subordinate appearances to universal rules of synthesis, and thus to fit them for thorough-going connection in one experience.

It is my belief that this must not be read in such a way that the “fitting” of the appearances (in the original German: *schicklich machen*) is understood as a “cutting down” of the appearances to the required size to make this “fit” possible. In other words: the transcendental framework of space, time and the categories is no Procrustean bed. The subordination referred to is dependent on the condition that the appearances are subject to rules of their own which *allow* for this subordination and integration into one experience. If this were not so no sense could be made of Kant’s epistemological horror scenarios which he paints so vividly and which address the real possibility that nature might be recalcitrant to our efforts to understand her.⁸³ As will become clearer in the next two chapters, the formal transcendental conditions of empirical knowledge are only necessary, but not sufficient conditions. For empirical knowledge to be possible a further material transcendental condition has to be fulfilled, i.e. the content of knowledge must have its own, mind-independent structure. Much of what Kant says can obscure this essential dependence of the formal on the material conditions of knowledge and it can at times appear as if this relationship were seen by Kant as a top-down relationship between the “higher” transcendental and the “lower” empirical laws.⁸⁴

To sum up: Longuenesse does not interpret the Kantian text as it stands. She claims to know what Kant meant to prove, while conceding that he does not say what he would have had to say if he had wanted to prove what she insists he did want to prove. Against such a complicated reading, I would recommend one that is far more straight-forward and much closer to what Kant actually says and maintain that Kant’s intention was less ambitious. I think that his proof does not stand in need of any repair or disambiguation because it is meant to establish less than the radical ontological principle Longuenesse believes Kant wants to establish. The discrepancy between what Kant claims and what he

82 See Kant’s exposition of this in the opening section of the preface to the MFNS. More will be said about this important point in chapter 3.

83 See p. 65 of Baumann’s *Transzendente Deduktion der Kategorien bei Kant und Fichte*: “That sensibility could well, beyond its form amenable for the understanding – this is already inexplicable –, prove recalcitrant for the understanding with its content, remains always thinkable and gives an idea of the abyss over which the understanding hovers.” In: K. Hammacher und A. Mues (ed.) 1979 (The translation is my own.) For Baumann’s more recent interpretation of the same passage see Baumanns 1997, p. 401.

84 This is also suggested by Kantian phrases like “descending to the conditions of sensibility” (B 300).

succeeds in proving disappears if the assumption that he tries to prove a strong version of the Second Analogy is dropped. There is therefore no need to repair or complete his argument. This may suffice as an exposition of the strong interpretation of the Second Analogy. I shall now turn to the weak interpretation.

4.3. The weak interpretation

The arguments advanced against the strong readings of Schopenhauer, Strawson, Friedman and Longuenesse would, in my view, also suffice to show that the weak interpretation is untenable. However, it will be instructive and also help with the further articulation of my No-Priority thesis to analyse also the arguments advanced in defence of the weak interpretation of the Second Analogy by Allison and Guyer. Proponents of the weak interpretation overlook that there is a third position: the weaker-than-weak interpretation defended in this chapter. Thus Allison thanks Buchdahl for comments on chapter 10 of his *Kant's Transcendental Idealism*, in which he defends his weak interpretations of the Second Analogy. However, he does not see that his own position differs substantially from Buchdahl's and would need to be defended in *both* directions: i.e. not only against the strong, but also against the weaker-than-weak, which is Buchdahl's interpretation and which I will consider later.

If the interpretation I advocate is correct, it must be possible to show where defences of the weak interpretation go wrong. This is what I would now like to do by assessing the arguments put forward by Allison and Guyer, for both of these commentators reject the strong and defend a weak interpretation of the Second Analogy. They uphold Kant's arguments, yet they maintain that he merely wants to prove that *every* event has *some* cause, but not that like causes have like effects. I will turn first to Allison's interpretation.

4.3.1. Allison's interpretation

My exposition of Allison's interpretation is based on chapter 10 of his *Kant's Transcendental Idealism*. Allison assumes that Kant wants to prove the "every-event-some-cause principle".⁸⁵ He believes that this interpretation is the only one compatible with the argument of the Second Analogy. Rather than first presenting Allison's arguments for the defence of his weak interpretation and then criticise them in a separate section, as I have done for the previously discussed commentators, I found it preferable in this case to

⁸⁵ He borrows this phrase from L.W. Beck. See also his remark "...that Kant's argument is intended merely to establish the modest thesis that every event has some cause". (Allison 1983, p. 222).

allow the exposition of Allison's arguments and my comments stand side by side. In line with the logic of this chapter, I shall argue that we should not accept Allison's interpretation. To anticipate the result, I hope to show: (1) that Allison's interpretation is not consistent with much of what Kant says about causality; (2) it suffers from its own internal contradictions; and (3) it leaves key questions unanswerable.

Allison maintains that the Second Analogy must be understood as the application of Kant's transcendental turn to the special problem of "an objective temporal order".⁸⁶ I shall now look at the way in which Allison thinks that the transcendental turn should inform our understanding of the Second Analogy.

After quoting two passages from the text of the Second Analogy, in which Kant defines the object as "*that* in the appearance which contains the condition" for a "necessary rule of apprehension" (B 236) and in which he says that the "dignity" of "relation to an object" is acquired by our representation only in so far as they "are necessitated in a certain order as regards their time-relations" (B 242) Allison says that he prefers the second "because it does not contain the misleading suggestion that the rule in question is one that determines apprehension."⁸⁷

Both of these quotations from the text of the Second Analogy do not refer only to the unity of consciousness, but to the object that all empirical knowledge focuses on. Allison, however, maintains that the necessity Kant refers to in these passages is only meant to be a conceptual constraint. When he reaches the discussion of the example of a ship sailing down a stream and the irreversibility thesis Kant introduces with it, Allison deplores the way Kant expresses it. Kant says: "The order in which the perceptions succeed one another in apprehension is in this instance determined, and to this order apprehension is bound down."⁸⁸ Here again we have a clear reference to the fact that in empirical knowledge Kant sees us as dealing with an object that, as he puts it, "prevents our modes of knowledge from being haphazard or arbitrary" (A 104/5). Because of the way he understands Kant's transcendental turn this passage is problematic for Allison. He finds it "very misleading"⁸⁹ and a case of Kant speaking "loosely".⁹⁰ He then maintains that it would be a misunderstanding to think that Kant was really claiming here that the apprehension was "bound down", for:

86 Allison 1983, p. 221.

87 Allison 1983, p. 221.

88 CopR, B 238.

89 Allison 1983, p. 224.

90 Allison 1983, p. 225.

... we cannot regard the irreversibility of the perceptions *ab* in the perception of an objective succession *AB* as either a property which these perceptions have in 'empirical consciousness' or as a datum from which we can somehow infer that an objective succession has occurred.⁹¹

It seems to me that with this argument Allison has cut the transcendental self off from her world: it has become impossible to see how we could ever come to know that an objective succession has occurred. This claim also brings Allison into direct conflict with the text of the Critique, for, as we saw already when discussing Schopenhauer's criticism, Kant sees things differently: "The sequence in time is thus the sole empirical criterion of an effect in its relation to the causality of the cause which precedes it." (B 249) Allison's long discussion culminates at three points which I now want to briefly comment on.

(1) In a section discussing the nature of Kant's claim Allison phrases the central question to be answered as follows: "Just what does the argument of the Second Analogy require us to assume about the connection between an event and its perceptual antecedent?"⁹² I think this question looks for an answer to a problem that is not Kant's. The Second Analogy, in my view, does not require us to make *any* such assumptions. The problem Kant is trying to solve is: How do we give a sequence of perceptions a more than subjective relevance? By relating events and their perceptual antecedents Allison is talking about more than the Second Analogy allows. It is not so much concerned with the existence of events. It asks instead: What are the conditions for the possibility of the acquisition of empirical knowledge of events, *if they were to exist*. Allison's weak interpretation, like the strong interpretation, is still over-concerned with "physical connections". However, Kant is concerned with "metaphysical connections", with the conceptual conditions for the acquisition of empirical knowledge of objective time relations.

(2) Allison sees the essence of Kant's argument in the following quote from the text of the Second Analogy:

But if this synthesis is a synthesis of apprehension of the manifold of a given appearance, the order is determined in the object, or, to speak more correctly, is an order of successive synthesis that determines an object. (B 246)

Allison reads this sentence as a corroboration of his interpretation. Therefore he has to interpret it as saying that the ordering of the successive synthesis by the understanding turns the mere apprehension of the manifold of a given appearance into an object, i.e. this conceptualization "produces" objectivity.

⁹¹ *ibid.*

⁹² Allison 1983, p. 229.

Kant's self-correction

- from: the order of the synthesis "is determined in the object"
- to: the order of the synthesis "determines an object"

appears to lend itself to this reading. I do not think, however, that this is the correct way to understand this sentence. Instead, I think it must be read along the lines that Allison rejects, i.e. I think it is a further case of the synthesis being "bound down". It is only because the actual synthesis is beyond the experiencing subject's control, "necessitating" the order of her apprehension, that it can be regarded as "determining an object". I think this becomes clear when we look at the sentence directly preceding that quoted:

In the imagination this sequence is not in any way determined in its order, as to what must precede and what must follow, and the series of sequent representations can indifferently be taken either in backward or in forward order.⁹³

In my view this shows that what Kant is doing here is the following: to contrast mere imagination with the apprehension of empirical reality. What makes it impossible for our representation to be "taken either in backward or in forward order" cannot be the "imposition of an a priori rule". What prevents our apprehension from being haphazard or arbitrary is the fact that it is "bound down" (A104) by the object.

(3) Allison reaches the conclusion of his whole argument in defence of a weak interpretation of the Second Analogy with the following statements:

The basic point is that judgements about objective temporal succession do not presuppose that the elements of the succession are connected by empirical laws. All that is presupposed is that there is some antecedent condition (presumably roughly with x 's being in state A at t_1), which being given, state B necessarily ensues for this particular x at t_2 . There are no additional assumptions about the repeatability of the sequence and its relevance to other objects of x 's type that are either required or licensed by this presupposition.⁹⁴

Allison here assumes that the concept of causation is independent of the concept of uniform explanation. First, this is in itself not obvious and Allison does not provide any supporting argument for this assumption. It is not obvious that one can assume that state B of an object x can follow state A of that object necessarily while making *no* additional assumptions about repeatability. Second, and more importantly, I think that Kant would not have accepted an interpretation of the Second Analogy that separates the aspects of necessity and uniformity of empirical laws, for the following reason: fairly late in the discussion of the Second Analogy Kant makes the following general observation about the forces of nature:

⁹³ CopR, B 246.

⁹⁴ Allison 1983, p. 231f.

How anything can be altered, and how it should be possible that upon one state in a given moment an opposite state may follow in the next moment – of this we have not, *a priori*, the least conception. For that we require knowledge of actual forces, which can only be given empirically, as, for instance, of the moving forces, or what amounts to the same thing, of certain successive appearances, as motions, which indicate [the presence of] such forces.⁹⁵

We can see from this that, for Kant, the reason for changes in nature are the working of real forces. If we combine this general claim of Kant's with another claim he makes about natural forces at the beginning of the Transcendental Dialectic, i.e. that they cannot by themselves deviate from their laws,⁹⁶ we have good reason to think that Kant would not have accepted a weak interpretation of the Second Analogy. If natural forces require a law of their efficacy,⁹⁷ the separation of the necessary and the law-like character of their efficacy would not have been entertained by Kant as a real possibility.⁹⁸

Allison, however, thinks that one can talk about "objects of x's type", without making any assumptions about uniformity in nature. But this would appear to be a contradiction, for it would seem that one cannot talk about objects of a certain "type" without assuming some degree of uniformity. Thus the weak interpretation can only be formulated in a language that makes presuppositions it claims not to make. Allison's weak interpretation maintains that Kant defends some weak form of natural necessity. However, it seems that, for Kant, necessity and uniformity are two aspects of empirical laws that must be clearly differentiated, but which are, nevertheless, inseparable. At the level of empirical laws they are mutually implicative: there can be no *universal* law that is not *necessary*.

By excluding the order in which perceptions are apprehended from the irreversibility thesis and by limiting it "to the order in which they are conceptualized in a judgement concerning objective succession" (227), Allison makes it impossible to comprehend *what* it is that is understood by this conceptualization. He has ruled out all empirical events from his discussion and, a point that bears repeating, in my view he has cut the self off from the world. While Allison's proposal of how to understand the principle of causality might be nevertheless worth considering, despite its *prima facie* lack of plausibility, I do not think that it can be accepted as an interpretation of Kant's view.

95 CopR, B 252.

96 *ibid.*, B 350.

97 See also the following relevant statements: "To conceive of oneself as a freely acting being and yet as exempt from the law which is appropriate to such a being (the moral law) would be tantamount to conceiving a cause operating without any laws whatsoever (...); this is a self-contradiction." See *Religion within the Limits of Reason Alone*, A 32.

98 With his culminating statement Allison, incidentally, contradicts his own earlier and better insight. Earlier in his argument he says: "Kant's use of the conjunction *and* suggests that following 'necessarily' and following 'in accordance with an absolutely universal rule' are two distinguishable properties which are assigned to every effect considered in relation to its cause. In reality, however, they come to the same thing." Allison 1983, p. 223.

To conclude my analysis of Allison's interpretation of the Second Analogy: (A) Allison defends Kant against Strawson's and Lovejoy's criticism that he confuses two kinds of necessity: temporal succession and a universal causal law. "Rather, here as before, his argument is to the effect that the latter (the universal rule) is a necessary condition for the consciousness of the former."⁹⁹ However, what Allison does not tell us is why and how this consciousness of a necessary temporal succession contributes to objective *knowledge*. In section 3.1 of chapter 5 I will return to Allison's interpretation of Kant's transcendental turn.

(B) Central to the Second Analogy is the concept of a rule. Kant proves the necessity of assuming the existence of rules *if* we want to hope to be able to understand natural events of empirical reality. Allison's weak interpretation excludes what we need to assume if we want to understand the empirical world, i.e. empirical rules.

(C) Finally, the weak interpretation defended by Allison is no answer to Hume's scepticism. Kant saw the scandalous result of Hume's analysis of the concept of causality in the fact that it abolished all knowledge.¹⁰⁰ For if the concept of causality can be shown to rest on less than rational grounds, it is not a rational activity to search for causal laws in nature. They have become "unthinkable" *as laws*. It is of little benefit to a researching physicist to know in principle that "every event has some cause" if this principle does not entitle her to any *additional* assumptions about types or kinds of things. A science relying only on the principle of causality understood in its weak form and not entitled to assumptions about kinds of things, i.e. empirical principles, cannot yield empirical knowledge. Such a science would only describe the world, not understand it. I now would now like to turn to Guyer's interpretation.

4.3.2. Guyer's interpretation

Like Allison, Guyer advocates a weak reading of the Second Analogy. My exposition of this interpretation is mainly based on chapter 10 of his *Kant and the Claims of Knowledge*. Guyer takes Kant's intention in the proof of the Second Analogy to be the following:

The thesis of Kant's single argument about causation is that causal rules are needed to determine the succession of objective states of affairs in time and thus to judge that any objective events have transpired.¹⁰¹

⁹⁹ Allison 1971, p. 377.

¹⁰⁰ Compare *Critique of Practical Reason*, A 92.

¹⁰¹ Guyer 1987, p. 242.

By adopting this interpretation Guyer overlooks a number of statements in the proof of the Second Analogy which, in my view, show that this cannot be regarded as Kant's *only* argument, although it captures an aspect of the proof of the Second Analogy. Kant maintains that the "appearances must themselves determine their positions in time for each other"¹⁰² and that in event perception we "cannot order the apprehension otherwise"¹⁰³ than in the order in which they actually succeed one another. I think this implies that we do not need to understand what we apprehend, i.e. we do not need to know the laws that may or may not govern what we apprehend in order to objectively apprehend it in the order we do.¹⁰⁴ Based on Guyer's interpretation the last statement would be false. However, Kant confirms that statement with his dictum that the sequence in time is "the sole empirical criterion of an effect in its relation to the causality of the cause which precedes it".¹⁰⁵

Guyer's interpretation not only contradicts Kant's unambiguous statements to the contrary, it also faces its own internal aporia. If the evidence "furnished by the order of perceptions"¹⁰⁶ were insufficient to determine the objective sequence of events, the question arises as to how we could ever experience completely new sequences objectively.

The following question raises another problem faced by such an interpretation: if Kant had only shown what needs to be assumed if we want to be able to objectively determine changes in nature, i.e. that causal laws exist, would that have refuted Hume's scepticism with regard to the legitimacy of the concept of causality? Would Hume not have agreed with that statement? It would be just a matter of what we do or even must do, but not of our *entitlement* to do so, which in my view is the problem Kant addresses in the Second Analogy. Guyer appears not to differentiate here between the justification of the general principle of causality and the problem of its application in special cases.¹⁰⁷

Guyer advances a number of additional arguments in support of his interpretation of the Second Analogy. Again, assuming that he explains Kant's view, he says:

102 CopR, B 245, original without italics. Although Kant here says that the appearances "must" determine their positions in time for each other this cannot be taken to be purely postulatory. His talk about our apprehension being "bound down" shows that he takes it that this is what actually happens when we perceive an event.

103 CopR, B 238.

104 But prior to Newton humans clearly had no problem to perceive the objective order of the changing tides, despite the fact that they could not explain and therefore did not understand that sequence.

105 CopR, B 249.

106 Guyer 1987, p. 256.

107 Kant saw this the same way: "The question was not whether the concept of cause was right, useful, and even indispensable for our knowledge of nature, for this Hume had never doubted; but whether that concept could be thought by reason a priori, and consequently whether it possessed an inner truth, independent of all experience It was a question concerning the origin, not concerning the indispensable need of the concept." *Proleg.*, A 10.

So the determination of the temporal order of the represented states must be grounded on something other than either the order of the representations (even supposing that to be directly apprehended – although it is ultimately crucial to Kant's argument that it is not) or the order of the objective states themselves.¹⁰⁸

As Guyer has cut the determination of the temporal order of represented states off from both the order of those representations and the order of the objective states themselves, one has to ask what remains, on which this determination could now be grounded. In my view, like Allison with his in my view subjective idealist interpretation, with this argument, Guyer has cut the self off from her world. We have already seen that what he regards as crucial to Kant's argument, i.e. to realize that the order of the representations is not apprehended directly, contradicts what Kant explicitly says, for according to him their time sequence is the only empirical criterion of the sequence of causes and effects.

Summing up his criticism of Bird's¹⁰⁹ (in my view correct) interpretation, according to which the Second Analogy can also be read as an analysis of the concept of an event, Guyer states that "on Kant's theory causal laws are not logical consequences of determinacy but the epistemological preconditions of knowledge of determinacy."¹¹⁰ He illustrates his claim by revisiting Kant's famous example of the ship flowing down a stream.¹¹¹ He accuses Bird of missing the point of Kant's example. Despite its length, I would like to quote his own explanation of the example as in my view it can serve to show how Guyer himself misunderstands Kant's famous example:

For Kant's claim is that, given only two successive *observations* of the ship, which in imagination can be set in either of two orders, it can be determined that they represent (for example) the ship's sailing downstream only if, in the circumstances which are being assumed, it *would* be impossible for that ship to be sailing upstream. Kant's theory is precisely that it is only if we are in possession of causal laws which dictate that in the relevant circumstances – that is, not in general, but in the particular circumstances of wind, tide, setting of the sails, and so forth, which are assumed to obtain – the ship could only sail downstream that we actually have sufficient evidence to interpret our representations of it to mean that it is sailing downstream.¹¹²

What Guyer is saying here is that only if we know that the ship could not sail upstream do we have reason to believe what we see, i.e. that it is sailing downstream.¹¹³ I think that this interpretation of Kant's famous example misses a number of important points:

108 Guyer 1987, p. 244.

109 Compare Bird 1963, p. 153–168.

110 Guyer 1987, p. 252.

111 We are not told by Kant that the ship is sailing. The original example reads: "For instance, I see a ship move down stream." (B 237) Guyer has considerably embellished Kant's far simpler example. However, it shows how he misunderstands Kant main point.

112 Guyer 1987, p. 252. See also Guyer's claim: "Only from a rule which says that one of the represented states must succeed the other can it be inferred that it does succeed the other." (ibid., p. 248)

113 By implausibly claiming that we need knowledge of causal laws to determine the objective sequence of events Guyer makes it impossible to explain how we could perceive the order of contingent events objectively. Earlier he had conceded that not every latter stage follows from a former one (see p. 240).

(i) Guyer does not see that Kant trusts the sequence of apprehensions as veridical. It is the “sole empirical criterion” (B 249) of the time order, a most important point that bears repetition. The necessitation “which makes possible the representation of succession in the object” (B 242) originates from the *object* and binds down our apprehension. This necessity has no subjective origin, it is not the result of the imposition¹¹⁴ or application or injection of a “rule”.

(ii) *Imagination* plays no part in this picture. The *apprehension* of the observer is “bound down”: the observer just sees the ship moving downstream. She does not infer or conclude this.

(iii) By claiming that causal laws are the “epistemological preconditions of knowledge of determinacy”, the point he claims the example is intended to illustrate, Guyer ascribes to Kant a doctrine about empirical laws that is not his. For Kant the whole empirical realm is one of uncertainties. This is vividly expressed by Kant in the following passage:

In natural science, on the other hand, there is endless conjecture, and certainty is not to be counted upon. For the natural appearances are objects which are given to us independently of our concepts, and the key to them lies not in us and our pure thinking, but outside us; ...¹¹⁵

Since we cannot count on certainties it follows that it would be false to ascribe to Kant the view that we know that empirical laws are “determinate” or necessary. Not being “determinate” they are also unable to “dictate” anything.¹¹⁶ It is only a corollary of Kant’s argument that we fully understand what we experience if we can interpret it in terms of laws we know, but that is not Kant’s main point in the proof of the general causal principle. In my view all he wants to demonstrate is that the category of causality has an a priori origin, that it is a “child of reason”, not a “bastard of the imagination, impregnated by experience”.¹¹⁷

In my view what lies at the root of Guyer’s interpretation of the Second Analogy is a false conclusion concerning what Kant says about time ordering. According to Guyer:

The underlying premise of Kant’s argument, then, is precisely, that time cannot be directly perceived, or that at the very least, objective temporal relations are not simply given in passive apprehension.¹¹⁸

The question then arises as to how we know which states belong together. He seems to me to make the mistake Schopenhauer accused Kant of: he intellectualizes sensibility in order to need less of its input.

114 See, for example, Pluhar, p. XXXIII: “These principles are “universally valid” (hold for everything) in the phenomenal world (the world as it appears), i.e. in nature, simply because our understanding makes it so.”

115 CopR, B 508.

116 Earlier in his exposition Guyer had conceded this by pointing out that “Kant’s general position on empirical knowledge assumes the uncertainty of all such judgements” Guyer 1987, p. 240.

117 *Prolegomena*, A 9.

118 Guyer 1987, p. 244.

He seems to assume that the fact that time cannot be directly perceived implies that objective temporal relations cannot be given in apprehension. Why else would he consistently ignore Kant's clear statement to the contrary? Now, according to Kant we cannot perceive *absolute* time and therefore no absolute temporal position. But this does not mean, and we saw that Kant does not take it to mean, that we cannot perceive positions in time *at all*, as Guyer appears to assume. *Relative* temporal positions can and are experienced by us. However, Kant's main point is that this ability of ours implies that we need to apply a rule, the rule that "all alterations take place in conformity with the law of the connection of cause and effect" (B 232).

I would like to conclude this section by commenting on a quotation from an essay of Guyer's on *Reason and Reflective Judgement* which demonstrates his general understanding of Kant's epistemology. He concludes this essay with the following claim:

Kant does not explicitly retract the first *Critique's* doctrine of transcendental affinity and the entire metaphysical picture it implies, the picture on which we *unfailingly impose* complete order on the *utterly plastic material* furnished to us by the remarkably cooperative things in themselves.¹¹⁹ (original only with first italics)

I think that it has emerged in this chapter that Kant does *not* assume that the material of experience is "utterly plastic". If it were so: how could we experience a world with an order describable by specific empirical laws? How could we establish *order* out of *utterly plastic* material? There would be no "pressure"¹²⁰ from such a material as to why we should constitute this rather than any other empirical world. And wherein could the "cooperation" of things in themselves consist if the material they provide lacks any determination of its own? Such a cooperation would not be "remarkable": it would not get off the ground at all!

I have allocated Guyer to the group of commentators who maintain that Kant merely wishes to prove the weak version of the Second Analogy, however I have not yet provided any textual evidence that Guyer does in fact belong to this group. He does not address this debate expressly and take sides in it and the question as to whether he belongs into this group is difficult to answer. However, when Guyer suggests that for Kant the "*a priori* objective validity of the categories ... implies that for every empirical intuition some regularity exists which connects it to some other"¹²¹ in my view we can read this as evidence for the fact that he does indeed belong to the camp of the weak

119 Guyer 2003a, p. 37.

120 To borrow a phrase from Buchdahl; see Buchdahl 1976, p. 614.

121 Guyer 2003a, p. 42.

interpretation. If he were an advocate of the strong interpretation, he would have had to say in this case that for every empirical intuition there exists not some, but one particular regularity which connects it to not some, but one other specific intuition. It seems to me that his general view of Kant's epistemology as evidenced by the above quotation and his constant emphasis on the "ordering" activity of transcendental selves also commits him to the weak interpretation. For in a world of strictly necessary causal laws there would be no room for such an activity. This may suffice as a discussion of the weak interpretation of the Second Analogy. Finally, I would like to look at the interpretations of two commentators who defend a *weaker-than-weak* reading.

4.4. The weaker-than-weak interpretation

This interpretation is the one defended in this chapter. It defines the standpoint from which my counter-arguments to the strong and weak interpretations discussed in the previous sections of this chapter have been formulated, and I hope that its contours have become clearer in the course of the discussions presented in this chapter. My exposition of the views of commentators advocating the weaker-than-weak interpretation can therefore afford to be much briefer than those of the strong and weak rivals.

4.4.1. Buchdahl's interpretation

I shall first present Buchdahl's position in the way he has developed it in his classic *Metaphysics and the Philosophy of Science* and in a number of subsequent articles.

Buchdahl states clearly that in the Critique of Pure Reason he takes Kant to be only concerned "with providing an account of the notion of an object in general".¹²² Therefore the Second Analogy does not provide a "justificatory basis for the empirical law-likeness of nature"¹²³ and, although Kant's defence against Hume's scepticism is successful, "what is thus established is not empirical causality, even in principle".¹²⁴ Again, at pains to limit the proof contained in the Second Analogy, Buchdahl explains that to cognize a sequence of perceptions as objective, we must assume that the perceptions are connected in a way that can be understood with the "model" of the concept of a causal nexus. However this model is only used "indeterminately":

This use is emphatically not to be construed as implying that I think the perceptions connected causally, in the sense of the resulting sequence being a possible or even putative instance of an empirical, and hence contingent, causal sequence.¹²⁵

122 Buchdahl 1967, p. 624.

123 *ibid.*, p. 652.

124 *ibid.*, p. 655.

125 *ibid.*, p. 654.

These quotations clearly show Buchdahl to be a proponent of what I have called the weaker-than-weak interpretation. However, there are other aspects of the way Buchdahl interprets Kant that I disagree with. This shows that even if a weaker-than-weak interpretation of the Second Analogy is adopted, this leaves room for misunderstandings. In what is possibly the clearest and most succinct summary of his argument, Buchdahl states the following about the concept of causality:

It no more than reconnects the 'broken' order of perceptions which – because of our inability to supply an absolute time-clamp – has to be conceived as 'accidental'. Its function is merely to reconstitute the notion of 'possible experience', and of a 'determinate', i.e. 'objective' appearance. Hence the objective sequence can itself be rendered 'necessary' in no stronger sense than would result from its being anchored (per impossibile) in a formal framework of absolute time.¹²⁶

Mindful of Kant's distinction between metaphysical and physical connections which we looked at earlier, he sees correctly that the necessity dealt with in the Second Analogy refers to the metaphysical connection in the understanding, not to the physical connections between the events perceived. However, in my view when he puts 'objective' in apostrophes he fails to realize that the category does indeed help us to understand objective necessities "when met with in experience".¹²⁷ The 'conceptual clamp' understands the irreversibility of the order of perceptions with the help of the category of "necessary connection": its addition does not *account* for this irreversibility, it only enables us to *understand* it.

It is truly astonishing how much scholarly effort has gone into the discussion of Kant's simple example of a ship floating down a stream. Buchdahl has his own interpretation of it:

The concept [of 'cause', MW], so to speak 'ties down' the order of perceptions in a determinate way... . The subjective or accidental order of the ship's positions, A', B', is hence converted into an objective one, by thinking or conceiving their order in such a way 'that it is thereby determined as necessary which of them must be placed before, and which of them after, and that they cannot be placed in the reverse relation'.¹²⁸

According to Buchdahl the problem of the Second Analogy is seeing which concept will convert a purely accidental sequence of perceptions into a sequence that is "externally determined".¹²⁹ Again by putting 'externally' in apostrophes Buchdahl diminishes the role of objective reality that all our causal thinking is trying to understand. As has become clear in our discussion of Allison's analysis, for Kant, the "tying down" of the perceptions clearly

¹²⁶ *ibid.*, p. 663.

¹²⁷ CopR, B 798.

¹²⁸ Buchdahl 1967, p. 649. The quote within this quote is CopR, B 234.

¹²⁹ *ibid.*, p. 649.

originates from the *object* of our knowledge and is not to be thought of as the result of the application of a *concept*. Only because our apprehension is beyond our control in this way can we assume to be in touch with empirical reality. Like Guyer, Buchdahl assumes that “the ‘perceptions’ which ‘enter into consciousness’ do not carry with them any objective time order”,¹³⁰ thereby overlooking Kant’s emphatic claim to the contrary. In his comments on the ship example he also maintains that “clearly we are not to imagine that the ship’s sailing downstream ... is as such determined by preceding or underlying causes”.¹³¹ By doing so he overlooks an important statement from the Second Analogy in which Kant says the opposite. Kant says at B 252 that we cannot understand a priori how anything can be altered, because for that “we require knowledge of actual forces, which can only be given empirically, as, for instance, of the moving forces, or ... of certain successive appearances, as motions, which indicate [the presence of] such forces.”

I think this text shows that we must assume that a real force is the cause of the moving of the ship, i.e. the force of gravity. Kant’s example admittedly does not draw any attention to the cause of the ship’s movement. When interpreting it I made it clear that, in my view, the succession of time is all that matters to Kant in this example. Thus, I think that Buchdahl’s way of looking at this example fails to realize that the movement is, of course, determined by causes. Buchdahl repeatedly claims, and in my view correctly, that the transcendental laws and concepts require a balancing in empirical fact. However, I do not think that this can be provided just by “contingent objective sequences”¹³² as he seems to assume. In chapter four I will examine Buchdahl’s interpretation of Kant’s theory of matter. This will give me an opportunity to augment the somewhat brief account presented above. For now, however, I conclude that the existence of special causal laws in nature is a clear presupposition of Kant’s epistemology. This is especially emphasized by Baumanns, the last critic whose interpretation of the Second Analogy I would like to examine.

4.4.2. Baumanns’ interpretation

According to Baumanns Kant’s Second Analogy refers to the general, necessary and irreversible temporal sequence of the changes in the empirical world.¹³³ This principle is the condition of the possibility of acquiring empirical knowledge of the empirical causal

130 *ibid.*, p. 644.

131 *ibid.*, p. 650.

132 *ibid.*, p. 660.

133 Cf. Baumanns 1997, p. 624.

laws that describe special uniformities in nature as well as of the law of association of our reproductive imagination, which could not function without it. When we think about events we assume that they are determined by what is temporally prior to them. When he observes that “an event gives, if it is to be called that, a sure indication to some condition, by which it is determined” one might initially be led to believe that Baummanns is arguing for the weak interpretation of the Second Analogy, i.e. that every event has some cause. However, when he continues by pointing out that the Second Analogy “only says *in abstracto* that for natural events it is indispensable to belong to a necessary time sequence” this impression is quickly dispelled. That he is a commentator defending a weaker-than-weak interpretation of the Second Analogy can be seen from the following summary of his reading:

The change of appearances, the one way of the one substance to exist, implies the thought that the beginning of every change presupposes something, onto which it follows in accordance with a strict rule, in the sense of a strict lawfulness of this following itself, not of a lawfulness which would determine this following as intelligible by some specific causal law. The causality of the Second Analogy “only” covers the temporal sequence of the appearances *as such*.¹³⁴

Unlike almost all other commentators Baummanns emphasizes that the causal principle is dependent on special laws of nature for its application. This is clear from the following two passages. In the context of fundamental observations on causal thinking in general, prior to his discussion of Kant’s Second Analogy he points out that the categorical laws can be “realized” only *together* with empirical special laws.¹³⁵ Pointing out that we can have subjectively valid “judgements of perception” only when we regard them as derivatives of objectively valid “judgements of experience” he says:

Only on the basis of the knowledge of special empirical laws can we in an individual case assume, that a judgement of experience is possible, i.e. can we maintain that we are dealing with a necessary sequence of appearance.¹³⁶

Without the knowledge of special empirical laws we would be “helpless”: we would be unable to apply the general causal principle. Although I owe more insights to Baummanns’ commentary than to much of the other secondary literature I have studied, there are some fundamental views expressed in it that I cannot agree with. Thus, when claiming to interpret, and not to go beyond Kant, Baummanns says, that “the subject gives itself to being” (*das Subjekt übereignet sich dem Sein*)¹³⁷ I can follow him in this way of expressing

¹³⁴ *ibid.*, p. 631.

¹³⁵ *ibid.*, p. 185.

¹³⁶ *ibid.*, p. 638.

¹³⁷ *ibid.*, p. 188.

things and understand this as a way of describing the fact that Kant sees the subject as somehow “open to the world”, as an expression of the “devotion to the object to be known” (*Hingabe an das zu erkennende Objekt*), as Baumanns puts it. However, when he reverses this and says that “being gives itself to the subject” (*das Sein übereignet sich dem Subjekt*), this way of describing Kant’s epistemology in my view has a decidedly Heideggerian ring to it. I think that such an interpretation goes much too far and reads something into Kant’s epistemology that I believe cannot be read into it. Moreover, this is not without its irony as Heidegger is a chief target of Baumanns’ criticisms. He is often quite harsh in his criticism of authors he disagrees with. However, his most polemical criticism is reserved for the author of *Kant und das Problem der Metaphysik*.¹³⁸

5. Conclusion and result

The discussions presented in this chapter could easily have been expanded for each of the authors covered and extended to additional authors. However I believe that even the necessarily limited ground covered and the effort that has gone into the analyses of the views of the authors examined and assessed has been richly repaid by a deeper insight into the nature of Kant’s claims and arguments in his difficult and much-disputed Second Analogy of Experience. The result of the investigations of this chapter may be summarized in the following way:

5.1. Summary

(1) In the Second Analogy of Experience Kant does not want to prove a tight causal nexus of strictly necessary empirical laws for all changes in nature. He only wants to prove that the thought of an objective succession in time implies the necessity of this succession of the moments of time itself. Whether two events that are objectively ordered in time are causally connected is a question that is not prejudged by the objectivity of their succession.

(2) Kant only wants to correct Hume’s modal mistake whom he deems “in error in inferring from the contingency of our determination *in accordance with the law* the contingency of the *law* itself.” (B 794) Kant merely claimed to have rescued the category of causality from the danger of being nothing but a figment of our imagination. However, its application in individual cases of specific experience is as problematic for Kant as it is for Hume.

¹³⁸ See, in particular, his criticism of Heidegger’s interpretation of the schematism in Baumanns 1997, 544ff.

(3) The defence of the claim that the categories have their origin in the pure understanding is only a necessary condition for the possibility of true beliefs concerning specific laws of nature. If the concept of causality could not be shown to be of non-empirical origin it would make no sense for us to turn to experience to corroborate individual empirical laws, for the concept of lawfulness would itself be groundless. However, even if the concept of causality can be shown to be a category of the pure understanding, which Kant is confident to have established, this alone does not bestow necessity on individual empirical causal statements.

(4) Kant's claim is that if we want to be able to think that we perceive an event, we must assume that the order of our perceptions could not be other than it is. This assumed necessity alone allows us to think that we perceive an objective succession. Necessity grounds objectivity, in this case: the objectivity of the sequence, not vice versa. However, this does not commit Kant to the view that every sequence we perceive is governed by a special causal law, because he distinguishes between two types of connection: the metaphysical in the understanding and the physical connection between events.

(5) The causal order of the empirical world is not imposed or injected by the mind. The mind and its forms of apprehension would find no application if the empirical world had no order of its own. The fact that for Kant the world of our experience is only a world of appearances rather than of things in themselves must not be identified with the claim that it is in some sense a construction of the mind, as it so often is.¹³⁹

(6) For Kant there is an order of the empirical world that allows our theories to be true or false. But it is such that it does not impose itself on the mind. Knowledge is no effect of the object in the subject. All empirical knowledge, in both our pre-scientific and scientific attitudes to the world, must be arrived at by creative acts of reflective judgment. The world is accessible to the mind only via true propositions. By emphasizing the essential interdependence of material and formal transcendental conditions, the No-Priority thesis can thus also be expressed in the following way: we can objectify the world only up to the limit of its own inherent intelligibility.

5.2. The new business of the next chapter

In my view, the numerous rival interpretations I analysed in this chapter can be shown to result from a failure to distinguish the principles of causality and purposiveness properly. This is difficult to accomplish for they are very closely linked indeed. However,

¹³⁹ I will have more to say about this interpretation of Kant in the last chapter.

they can and must be distinguished and disentangled, as failure to do so leads into error and confusion. I believe that the confusion surrounding the interpretation of the Second Analogy is a consequence of a failure to appreciate properly the claim defended by my No-Priority thesis, i.e. that the understanding is not the “master of nature”¹⁴⁰ and that, for Kant, the empirical content of experience is not just the field of the instantiation of the pure forms of the understanding. Instead, it appears to me that it must be appreciated that the empirical content of experience is raised to a transcendental status, that empirical knowledge depends for its possibility on both contingent material and necessary a priori formal conditions. The logic of truth developed in the Transcendental Analytic requires empirical criteria as its necessary complement. Therefore, in my view the Second Analogy has to be interpreted in the light of the principle of reason or judgement (to be dealt with in the next two chapters) as the principles of causality and judgment are complementary.

In this chapter we saw that Kant separates necessity and uniformity by allocating them to different levels, i.e. the transcendental and empirical level of empirical knowledge or experience. But although Kant sharply distinguishes between these two levels, we have also seen in this chapter that they are nevertheless essentially interdependent, and although distinguishable they are inseparable. In order to fully understand Kant’s epistemology we must try to understand this tension. It will be the task of the next two chapters on the Appendix to the Transcendental Dialectic and on systematicity in the Third Critique to examine Kant’s views on the Principle of Reason or Judgement and to discuss their relationship.

5.3. Final remarks

In this chapter I have examined representative interpretations of the three rival kinds outlined at its outset as these have been put forward by some of the better known commentators on Kant’s much-discussed proof of the principle of causality. They provide a prime example of a long-standing unresolved philosophical dispute. We have seen that advocates of the strong interpretation think that Kant has established by a priori reasoning what the world must be like, i.e. that all changes are subject to special strictly causal laws. Against this interpretation I argued that for Kant the claim that all changes in the world are of specific kinds, i.e. that there are special laws of nature governing specific types of events, is not guaranteed by the principles of the understanding. For all

140 CopR, B 753.

that is knowable a priori the world might be an utterly unintelligible succession of infinitely different states of affairs. We firmly believe that such an epistemological "horror scenario" could not obtain. However, the Second Analogy is not concerned with what we are convinced of on good but insufficient grounds, but with what is knowable a priori. We saw further that, while denying that the Second Analogy establishes the uniformity of nature, representatives of the weak interpretation still believe that Kant establishes a general causal principle, i.e. the principle that every event has some cause. But I argue against this interpretation that it does not agree with Kant's arguments either. I pointed out that, although he does not think that a general causal principle is provable a priori, Kant nevertheless assumes the existence of empirical laws. He thus believed both less and more than the advocates of the weak interpretation. This left us with the weaker-than-weak-interpretation of the Second Analogy. When interpreting Kant's famous example of a ship moving down a stream we saw that Kant understands the causal principle as a transcendental condition of the experience of an objective time sequence. Crucially, this does not imply any commitment to assumptions that would go beyond a weaker-than-weak interpretation of the Second Analogy. I believe that I have shown that this example can be read in such a way that Kant only wants to prove that without the presupposition that the moments of time follow each other necessarily, objective knowledge of a changing world would not be conceivable. However, if the order of the understanding is to be transferable to the real world, special causal laws of nature must exist. Yet this goes beyond what can be known a priori and is not the subject of the proof of the transcendental causal principle. That proof neither considers special causal laws that the strong interpretation assumes Kant wants to prove nor a general causal principle that the weak interpretation contends Kant tries to establish.

Chapter 2

Material Conditions for the Possibility of Empirical Knowledge

The eternal mystery of the world is its comprehensibility. It was one of the great realisations of Immanuel Kant that the setting up of a real external world would be senseless without this comprehensibility.

Albert Einstein

It is intelligibility rather than objectivity which is the clue to reality.

John Polkinghorne

1. Introduction

In this chapter I shall offer an interpretation of the Appendix to the Transcendental Dialectic of the Critique of Pure Reason.¹ I would like to demonstrate at the outset the way in which this interpretation is meant to contribute to the overall aim of my project. I shall try to show by way of a close reading of this crucial text how Kant argues for the essential incompleteness of the a priori elements of empirical knowledge. The argument of the Appendix to the Transcendental Dialectic can be summarized in the following six steps:

- (1) The understanding requires guidance by reason. Reason's contribution to knowledge is its insistence on the unity and systematicity of knowledge.
- (2) The systematicity of knowledge demanded by reason is a necessary criterion of truth.
- (3) Because it represents an a priori requirement, this systematicity is at least partly formal and to that extent entirely indeterminate.
- (4) Yet to provide a criterion of empirical truth systematicity must be determinate.
- (5) The determinacy required for the systematicity of knowledge must, therefore, be furnished by the material of knowledge.
- (6) Thus the possibility of empirical truth depends on the assumption that the objects of our knowledge display a systematic intrinsic order.

¹ I will concentrate mainly on the first half of the Appendix (B 670-696).

This chapter is divided into six sections. Following the introductory remarks in this section, the next section shall provide a brief summary of the problem addressed in the Appendix to the Dialectic. I shall then introduce its main claims and arguments. Section 4 shall address what appear to me to be the two most important questions of interpretation which these claims and arguments give rise to. In section 5 I shall undertake a detailed examination of the interpretations of three critics. The final sections, 6 and 7, shall discuss the overall result of this chapter and secure its contribution to the articulation and defence of my central thesis.

1.1. A first orientation

In order to obtain a first orientation regarding the text to be interpreted in this chapter, I shall begin by looking at its position within the overall structure of the Critique of Pure Reason. Kant says at the beginning of the second part of the Appendix, which deals with “the final purpose of the Dialectic of Human Reason”,² that it will complete the critical work of reason.³ Given this description it would appear difficult to exaggerate the importance of this section. Thus the “critical work” was not completed with the destructive part of the Transcendental Dialectic. Evidently, there is important unfinished business to be done. The respective sections of the Dialectic, which dismantle and reject the traditional doctrines of rational psychology, cosmology and theology, do not themselves contain any constructive contribution which the Transcendental Dialectic might make to the Transcendental Logic. This immediately raises the question as to what this contribution consists in. And since Kant’s goal in the Appendix is nothing less than to give a clear view of the outcome of the whole Transcendental Dialectic⁴ and “finally to fully complete”⁵ the discussions of the Dialectic of Pure Reason one might indeed wonder why Kant is addressing such a crucial task in a mere appendix.

We may perhaps see part of the answer to this question in the fact that Kant, especially in the first part of the appendix to be read closely in what follows, appears to develop ideas which he does not seem to be fully sure of. He does not develop one rigorous line of argument. The style of this section of the First Critique is uncharacteristically ruminative. Many critics can see in this text only claims so contradictory that

2 CopR, B 697.

3 *ibid.*

4 *ibid.*, B 708.

5 *ibid.*, B 723. The next chapter will look at the way in which Kant pursues the problems addresses in the Appendix to the Dialectic in the Third Critique in a new terminology. What Kant claims here about the completion of his philosophy is mirrored at the end of the preface to the Critique of Judgement where he says that only with the Third Critique has he finalized his Critical Philosophy.

they overdetermine a stable interpretation.⁶ Thus Abela sees Kant wrestle with a completely new vocabulary.⁷ Over long passages of the Appendix Kant does not seem to commit himself definitively to a certain view of the problems discussed. He uses the subjunctive a lot and the text is explorative rather than stating a definitive view. This is why, in my view, it is a mistake to see in it a “radical pronouncement”, as Geiger does. I think that the overall tone of the appendix is much too careful to support such a reading. Kant makes several attempts to develop the same idea and the text contains repetitions of the essential arguments which are illustrated a number of times with related examples. In a footnote to § 60 of the Prolegomena, in which Kant comments on the Appendix to the Dialectic, he concedes that the arguments presented in it could “on account of their dryness ... hardly be recommended to amateurs”⁸ and that he has included them only for experts. This adds to the impression that the content of the Appendix is of lesser importance or that it could even be skipped without endangering an overall understanding of the First Critique. It will emerge in the course of this chapter, however, that nothing could be further from the truth.

1.2. The importance of the Appendix for Kant’s epistemology as a whole

In view of what we have seen so far, it comes as no surprise to discover that many critics give the Appendix to the Dialectic little attention or that its importance has been overlooked.⁹ However, as I hope to show in this and the following chapter, I think that what Kant gives us for the first time in this text is a systematic account of ideas which are indispensable to the correct interpretation of his epistemology and that he was unhelpful to his critics when he failed to highlight the importance of these ideas by “hiding” them in an appendix and by down-playing their status in the Prolegomena, as we have just seen. However tentatively these ideas are presented here for the first time – Kant will give them renewed attention in the introduction to the Third Critique which will be analysed

6 Thus Kemp-Smith finds the teachings of the appendix “extremely self-contradictory” (Kemp-Smith 2003, p. 547). He thinks this is due to the fact that Kant has recast older material here and that he “leaves standing more of his earlier solutions than is consistent with his final conclusion.” (ibid.)

7 See *Kant’s Empirical Realism*, p. 255. I will come back to this critic’s interpretation at some length in the next chapter.

8 This down-playing of the value of the appendix is also expressed when Kant says that he has not tried to answer the question “whether or not experience is ... mediately subordinate to the legislation of reason”, although he regards it as important. He says that he has left it for those “who desire to trace the nature of reason even beyond its use in metaphysics, into the general principles of a history of nature.” See *Proleg*, A 188.

9 Thus Allison devotes a chapter to the Appendix only in the second edition of his classic *Kant’s Transcendental Idealism* (chapter 15, *The regulative Function of Reason*) and explains this as a result of a basic change of mind with regard to Kant’s theory of reason. He says that he has been awakened from his “dogmatic slumber” (p. xvii) on this issue by the work of his student Michelle Grier.

in the next chapter – they formulate elements of his overall epistemology which must be taken into consideration. It is due to their being overlooked that the Critical Philosophy has frequently been identified as a form of idealism rather than as the empirical realism which, in my view, it must be understood as primarily and foremost. As an example for such a case one might quote Thomas Nagel. In *The Last Word* he writes that in the system of Transcendental Idealism it is not conceivable how the order we find in our experience is “the product of an order that is there independent of our minds.”¹⁰ Nagel continues:

Applied to any real aspect of the natural order the Kantian interpretation seems bizarre. For example the detailed system of chemical laws summarized in the periodic table of the elements is not plausibly regarded as a result of the demands made on human experience by the conditions of its having as objects things existing in time, either successively or simultaneously.

Such criticism shows that the ideas which Kant presents and develops for the first time at some length in the Appendix to the Transcendental Dialectic and which he develops further in the two introductions to the Third Critique, which are crucially concerned with the problem of the systematic order of empirical knowledge, are not taken into consideration at all. For, in these texts, it becomes clear beyond any doubt that Kant’s specific form of idealism must not be identified with a view which claims that the order we find among the objects of experience is “a framework we impose on experience”.¹¹ Not only has Kant’s Transcendental Idealism nothing to fear from the fact that the order of nature cannot plausibly be regarded as imposed by the subjects of experience: the mind-independent order of the empirical world is so much a necessary element of Kant’s idealism that it is postulated by it.¹² Strawson, another and more famous critic, also overlooks the importance of this text when he writes in *The Bounds of Sense*:

With the end of the transcendental analytic comes the end of Kant’s positive or constructive metaphysics of experience. The exhibition of that necessary structure of fundamental ideas is *now complete*. What follows ... is the work of demolition...¹³

From what we have seen so far we can already say and will see more clearly in what follows that such a reading, which can see in the Transcendental Dialectic nothing but a merely destructive exercise, overlooks the crucial constructive contribution the Appendix to the Dialectic makes to the overall Transcendental Logic. Kant will develop and defend an additional transcendental principle that is needed to complement the a priori elements

10 Nagel 1997, p. 95.

11 *ibid.*

12 With remarks like these one risks appearing as an advocate of an uncritical apologia of Kant. However, I think that no progress is to be made in philosophy if the caricature of a complex theory is refuted.

13 Strawson 1976, p. 155 (*italics added*).

of knowledge elaborated in the *Analytic of Concepts and Principles*. In a display of confidence few contemporary philosophers would express, Kant did not fear to be refuted, only to be misunderstood.¹⁴ However well placed his confidence may have been: his fear anticipated a lack of understanding of basic assumptions of his epistemology. The following investigation of Kant's claims and arguments in the Appendix to the *Dialectic* will show that, in this text, Kant addresses questions which do not just relate to a special problem of his epistemology but that they go right to the very core of it. The Appendix not only provides an additional constructive element of knowledge but one that formulates a necessary complement to the principles of the pure understanding elaborated in the *Analytic*: an additional principle which is of *equal importance* to these other principles.

Nobody who is unfamiliar with these ideas can therefore hope to understand Kant's theory of knowledge. The principles dealt with in the *Analytic* pertain only to the *form* of knowledge, the appendix makes it clear that this form not only needs a *content* but that this content has to be of a certain kind if the a priori forms are to contribute to empirical knowledge. We will see in what follows that the a priori forms of knowledge require a systematic content as their indispensable complement.

1.3. Synoptic introduction to the central problem of the Appendix

Towards the end of the deduction of the categories, which is intended to prove that the possibility of objective knowledge is inconceivable without a priori concepts of the pure understanding, Kant mentions almost in passing that special empirical laws can only become known via experience.¹⁵ Since the deduction we can, therefore, expect that there is more to be said about empirical laws than the negative information that they cannot be deduced from the pure understanding. Indeed, the principles of the understanding do not guarantee a single empirical law and they alone could never suffice to understand the simplest event or state of affairs. It is this problem which had been left open since the deduction that the Appendix takes up again. One could be forgiven for overlooking the connection between the two stages of this one argument. They are, after all, separated by over 500 pages of text!¹⁶

If the systematic connection between things cannot be read off from them directly and if it does not "jump out at us", so to speak, the question necessarily arises as to what

¹⁴ CopR, B XLIII.

¹⁵ See CopR, B 165.

¹⁶ From B 165 to B 670.

guides the understanding in the direction of such systematic unity. Something can only be found if there are rules for searching. Just two examples may illustrate how central the idea of searching is for the whole of the First Critique. In the Doctrine of Method Kant says that in its pure employment reason is nothing but “a system of investigations in accordance with principles of unity”¹⁷ and towards the end of the deduction of the categories of the first edition of the Critique of pure Reason Kant says that the understanding is “always occupied in investigating appearances, in order to detect some rule in them”.¹⁸ Thus reason and the understanding are chiefly concerned with the search for the unity of their particular kind. In general, when we do not know what we are looking for and how and where to look we cannot possibly find anything.¹⁹ We cannot realize either that we have succeeded in our search if we have in fact done so. This is, however, not a rule without exceptions. Thus some scientific discoveries have been made accidentally. Physicists before Dirac had already postulated the existence of positrons, of “electrons with a positive charge”, and these had also been encountered in experiments. Yet because there was as yet no concept for them one was blind to their existence.²⁰ Thus intuitions without concepts are not fully blind, but they reveal less to us than when we come to them equipped with the concepts required to see what they present us with. Possibilities, including those of knowledge, only present themselves to those who know what they are looking for. As Kant puts it in the text under discussion: there are paths to be walked “that the understanding does not know”²¹ because it is lost in detail and blind to the bigger picture. Thus reason is required to “prepare the field for the understanding”.²²

Among the other related questions addressed by Kant are: (1) What entitles us to the assumption that our knowledge will be systematizable at all? (2) How can we know some one thing without knowing everything there is to know? (3) Is the world itself a system or only our knowledge of the world?²³ (4) Is it conceivable that our knowledge is systematizable even if the world it is knowledge of is not systematic in itself? Among the

17 CopR, B 766 (“Denn unsere Vernunft ist ... *nur ein System der Nachforschung ...*”) (italics added).

18 *ibid.* A 126 (“...die Erscheinungen ... *durchzuspähen...*”) (italics added).

19 This is succinctly put by Heidegger in *Being and Time*, § 2, p. 5 “As a form of searching the questioning requires guidance from what is sought.”

20 Polkinghorne 2002, p. 71.

21 CopR, B 708.

22 *ibid.*, B 685.

23 See the famous passage at the end of the Second Critique where Kant contrasts the starry heavens and the moral law, the two things that fill his mind “with ever new and increasing admiration and awe” and where he says about the former that it “begins from the place I occupy in the external world of sense, and enlarges my connection therein to an unbounded extent with worlds upon worlds and *systems of systems*, and moreover into limitless times of their periodic motion” (A 289, italics added) as well as a passage from the *Metaphysical Foundations of Natural Science* where Kant defines the universe as “the *system* of all matter” (A 153) (italics added).

most impressive examples of the systematicity of the world is undoubtedly that captured by the periodic table of chemical elements introduced by Mendeleev. With the help of this system he was able to predict the existence of further chemical elements²⁴ which was confirmed in his own lifetime. Without the system of elements, an “antecedent rule of reason”,²⁵ he could not have made such a prediction. An analogous case occurred in physics. In 1961 Gell-Mann and Neumann devised a system of elementary particles which enabled the prediction of the existence and characteristics of a particle they called an “η-meson”. It would be found before the end of the same year. All predicted features were confirmed in experiments.

The questions listed above formulate important philosophical problems. Yet, one will look in vain for any reference to them in the *Analytic of Concepts and Principles of the First Critique*. To that extent Nagel’s above-quoted criticism is understandable and justified. The question as to how a body of knowledge becomes a science and what distinguishes the naïve everyday use of the understanding from its scientific employment and what science in its most general form is *essentially* is answered by Kant in the *Doctrine of Method*, in the opening sentence to the third chapter on the *Architectonic of Pure Reason* where he says:

By an architectonic I understand the art of constructing systems. As systematic unity is what first raises ordinary knowledge to the rank of science, that is, makes a system out of a mere aggregate of knowledge, architectonic is the doctrine of the scientific in our knowledge.... In accordance with reason’s legislative prescriptions, our diverse modes of knowledge must not be permitted to be a mere rhapsody, but must form a system. ... By a system I understand the unity of the manifold modes of knowledge under one idea. ... (B 860)

A mere aggregate of knowledge (the word “aggregate” is derived from the Latin word for herd, i.e. “grex”) is, like scattered cattle, a collection of individual, unconnected sentences, a mere “rhapsody” that lacks all order, cohesion or internal structure. In this form they cannot constitute knowledge. Kant’s central claim is that science is a *system* of knowledge, and a system is the opposite of such an aggregate. In order to qualify for the honorific title of “science”, a body of knowledge must constitute a unity held together by a single principle. As might be expected, for Kant the archetype of such a system is the table of categories. It is instructive to see what he says about its structure: “This division is developed systematically from a common principle, namely, the faculty of judgment (which is the same as the faculty of thought). It has not arisen rhapsodically, as the result

²⁴ Lindner 1973, p. 271.

²⁵ CopR, B 685.

of a haphazard search after pure concepts, the complete enumeration of which as based on induction only, could never be guaranteed.”²⁶

After this brief introduction to the central philosophical problem of the Appendix to the Transcendental Dialectic I shall now look at Kant’s specific claims and arguments in more detail. My aim in the next section will be a concise overview of Kant’s argument by way of a close reading of part I of the Appendix.

2. The main claims and arguments of the Appendix to the Dialectic

Kant begins his exposition with a summary of the result of his investigations in the Transcendental Dialectic. They have confirmed the result of the Analytic: all attempts to go beyond the field of possible experience by means of a priori reasoning and to gain knowledge about the transcendental objects of the soul, the world as a whole and God are doomed to failure. Yet these attempts are due to a natural inclination of reason. In the Prolegomena Kant remarks that it is as unlikely that humans will give up asking metaphysical questions as that they “should prefer to give up breathing altogether, to avoid inhaling impure air.”²⁷ Thus transcendent ideas are as natural to reason as transcendental categories are natural to the understanding. Yet they contain an irresistible illusion which the most rigorous criticism is barely able to prevent.

2.1. The idea of a wise author of the world

Kant then makes a claim which is a characteristic expression of his overall rational faith and way of thinking:

Everything that has its basis in the nature of our powers must be appropriate to, and consistent with, their right employment – if only we can guard against a certain misunderstanding and so can discover the proper direction of these powers. (B 671)

With this surprising claim Kant confirms his assertion, made in the second part of the Appendix,²⁸ that it is a necessary presupposition of all reflection about the world to assume “a wise and omnipotent author of the world”.²⁹ Kant hastens to add, of course, that this does not amount to a knowledge claim of the kind declared as impossible by the

26 Kant criticises Aristotle’s list of categories for having been “picked ... up as they came his way” because he “lacked a principle for finding them” (CopR, B 107).

27 Proleg., § 60 (A 193).

28 On the “Final Purpose of the natural Dialectic of Human Reason” (CopR, B 697 – 732).

29 The full context is: “Can we, on such grounds, assume a wise and omnipotent author of the world? *Undoubtedly* we may; and we not only may, but *must*, do so. But do we then extend our knowledge beyond the field of possible experience? *By no means.*” (B 725) (italics added).

result of the Dialectic. This assumption merely serves to think a being in analogy to an intelligence “in relation to the systematic and purposive ordering of the world, which, if we are to study nature, we are constrained to presuppose”.³⁰ Owing to the limits of our reason we have no other way of conceiving the possibility of such a unity. We adopt this idea only with regard to the use of our reason “in reference to the world” (its *Weltgebrauch*).³¹ If we assume absolute validity for this idea, independent of this restriction, we have forgotten that we are thinking of “a being in idea only”.³² This leads us directly to the two ensuing questions, i.e. (1) whether the idea of a highest being can be put to use in the reflection on nature and (2) how this is to be done. According to Kant the first question must be answered in the affirmative because this is the entire point of the assumption. We are even entitled to regard the order of the world “as if” it were the purposive result of a genuine plan.³³

However, the order of the world may not be deduced directly from such a plan. There is an important proviso for all such teleological assumptions: the purposive order must be mediated by special natural means.³⁴ For Kant, metaphysics itself owes its existence to a “natural predisposition of human reason”³⁵ and I think it is in this context that Kant’s above-quoted claim that everything which is based in the nature of human powers has to be appropriate to its correct use should be read.³⁶ That the idea of a supreme wisdom as the origin of the world is a merely heuristic principle is finally asserted by Kant when he says that it must be the same to us whether we say that divine wisdom has ordained certain aspects of the world in our favour or whether we say that it has been wisely arranged by nature.³⁷

30 CopR, B 726.

31 *ibid.*, B 726.

32 *ibid.* This idea will be developed further by Kant in the Critique of Judgement. I will come back to it at some length in the next chapter which will examine the way Kant’s ideas on systematicity and teleology developed from the First to the Third Critique.

33 Kant does this, for example, when reflecting on the benefits that the spheroidal as opposed to perfectly spherical shape of the earth bestows on its inhabitants. If the latter were realized even minor elevations on the continents, such as might result from earthquakes, would lead to an alteration of the position of the earth’s axis within a comparatively short time. This teleological way of looking at this fact about our planet which Kant regards as valid, notwithstanding the fact that the spheroidal shape of the earth can, of course, be explained mechanistically: it results from the fluidity of the mass of the earth before its solidification. See CopR, B 715.

34 See B 726.

35 See the opening line of § 60 of the *Prolegomena*.

36 While conceding that any such speculation cannot be more than conjectural Kant suggests the following answer to the question as to what the benefit of the natural tendency of human reason for metaphysical inquiries might be. By leaving the contemplation of nature behind and thus transcending all possible experience, humans free their concepts from the limits of experience and, in this way, practical principles gain the scope without which they “could not expand to the universality which reason unavoidably requires from a moral point of view.” (*Proleg.*, A 185) In this way Kant turns the use of the regulative principle of reason that he is in the process of justifying on reason itself and finds that it is itself reasonable that we have reason.

37 See CopR, B 721.

It has become clear from all of the above that the only legitimate use of the ideas of reason is an immanent use. They are, however, not an optional addition to the use of the understanding. For, despite their merely regulative function, this function is not only excellent, but “indispensably necessary”.³⁸ Without these ideas the understanding would be blind because it would lack a goal to which it is directed. Only under the guidance of ideas can our knowledge become systematic. The unity of reason presupposes an idea of the whole of knowledge. This idea of the whole truth thus precedes the individual true statements.³⁹ It contains the conditions which determine for individual true statements their position and relation to the other statements and, moreover, postulates a possible completeness of knowledge. The idea of the whole truth, of the one system of all true statements, serves as a rule that helps the understanding to approximate to this goal of knowledge. Kant then makes a claim which can, I think, without exaggeration be regarded as the one assertion of the Appendix that due to the breadth of its implications calls for the most careful exegesis, yet which has, as far as I can see, not received the attention of critics that, in my view, it clearly deserves:

These concepts of reason are not derived from nature; on the contrary, we interrogate nature in accordance with these ideas, and *consider our knowledge as defective* so long as it is not adequate to them.⁴⁰

I will come back to this claim for an extensive discussion in the next section. The juxtaposition of defective and complete knowledge has an unmistakable and strong Platonic ring to it.

In conclusion we may summarize: the synthesis which all experience essentially consists in cannot come to a halt at the level of individual statements. These have to be integrated into comprehensive theories. In both cases it is a system that prevents knowledge from being a merely rhapsodic aggregate: in the case of the judgements of experience it is the system of the principles of the understanding, and in the case of these individual statements or judgements it is the idea of the system of the whole of knowledge.

38 *ibid.*, B 672. This is exactly what Kant says about the relationship between the *Metaphysical Foundations of Natural Science* and the general metaphysics of the First Critique which will be the topic of chapter 4.

39 Herein lies a parallel to an organism. The parts of an organism can also only be understood in relation to the whole. In the *Critique of Judgement* Kant will claim that *all* use of reflected empirical concepts and not only the more special consideration of organisms implies teleological thinking. This Kantian claim has been comprehensively and convincingly elucidated in Simon’s seminal article *Teleologisches Reflektieren und kausales Bestimmen*. I gratefully acknowledge that my own way of reading Kant is indebted to and has been inspired by the study of Simon’s writings on this topic.

40 CopR, B 674 (original without italics).

2.2. The merely logical or transcendental status of the Principle of Reason

The all-important question which arises at this point is the following: are we entitled to also regard this logical principle as a transcendental principle, i.e. is it only due to the nature of our cognitive capacities or does it lie in “the constitution of the objects”?⁴¹ Can one regard this unity as objectively necessary even apart from the interest that reason necessarily takes in it? Kant uses a number of alternative ways to phrase this question: is this systematic unity only a law of our searching, a mere method, or is it a feature of the objects of experience themselves? Is it “only an economical requirement of reason” or is it “one of nature’s own laws”?⁴² i.e. do things “by their very nature supply material for the unity of reason”.⁴³ Or does, whoever thinks so, succumb and fall prey to a new kind of illusion?

2.3. The principles of the homogeneity, specification and the continuity of forms

Before I turn to Kant’s answer to these questions, I need to discuss briefly the three logical principles that Kant claims embody the assumption of the systematic unity of all knowledge. These principles are:

1. the principle of homogeneity under higher species,
2. the principle of variety under lower kinds,
3. the principle of the affinity of all concepts.

Kant refers to them as those of homogeneity, specification and the continuity of forms.⁴⁴ The first principle is meant to prevent us from getting lost in a multitude of original kinds in our formation of concepts and it urges us to look for similarity among these. The principle of specification commands us to search for differences among things of the same kind, whereas the third principle, which results from the unification of the previous two, prescribes the unification of all concepts by way of a “gradual transition from one species to another”.⁴⁵ When these three principles of logical unity are regarded as transcendental principles and assumed to hold of the objects of knowledge themselves, they take the form of the following principles:

1. entia praeter necessitatem non esse multiplicanda. (B 680)
2. entium varietates non temere esse minuendas. (B 684)
3. datur continuum formarum. (B 687)

41 *ibid.*, B 676.

42 *ibid.*, B 676.

43 *ibid.*, B 681.

44 See CopR, B 686.

45 *ibid.*, B 688.

According to Kant, we are entitled to assume these transcendental principles because “it is only on the assumption of differences in nature, just as it is also only under the condition that its objects exhibit homogeneity, that we can have any faculty of understanding whatsoever.”⁴⁶ That these three principles cannot have their origin in experience is evidenced for Kant by the fact that everything systematic, from which they would have to be read off, is only noticeable because they precede experience. For this reason concrete examples of experience can never satisfy these laws but only approximate to them “asymptotically”.⁴⁷ Kant illustrates this with an example. If we were not instructed by these a priori principles of reason – which provide us with “frustration tolerance”, so to speak, to continue – our search for unifying kind terms would soon come to an end “when the senses are unable to disclose”⁴⁸ such a unity.

Yet one could rightly say that everything Kant has said up to this point has not yet answered the difficult question asked earlier as to whether these three principles of all scientific searching and thought can be given a convincing justification. According to Kant, in a similar way to the causal principle, the truth of these principles cannot be established directly but only indirectly by showing that they express assumptions which are *ineliminably involved* in the use of our cognitive capacities. Kant’s most decisive argument comes in the following passage:

The law of reason which requires us to seek for this unity, is a necessary law, since without it we should have no reason at all, and without reason no coherent employment of the understanding, and in the absence of this no sufficient mark of empirical truth. In order, therefore, to secure an empirical criterion *we have no option* save to presuppose the systematic unity of nature as objectively valid and necessary.⁴⁹

The kind of situation that would arise from thorough-going scepticism with regard to the transcendental principles is simply intolerable because it amounts to nothing less than an abnegation of our intellect. For unsystematic knowledge is not insufficient in the sense that we must hope for its improvement. It is insufficient in the more radical sense that it is *insufficient as knowledge*, i.e. no real knowledge at all. The argument here follows the basic pattern familiar from the Analytic. What *must* be assumed for the possibility of experience to be even conceivable is therefore also necessary of the objects of experience: “Now, in respect to the objects of experience, everything without which the experience of these objects would not itself be possible is necessary.”⁵⁰ The scenario that would

46 *ibid.*, B 685.

47 *ibid.*, B 691.

48 *ibid.*, B 685.

49 *ibid.*, B 679 (*italics added*).

50 *ibid.*, B 259.

result without this assumption just cannot be contemplated. Those who dispute this assumption do not see that it formulates one of the most basic conditions for the possibility of experience, i.e. the condition required to conceive the possibility for the building of empirical concepts which themselves are a *conditio sine qua non* for any empirical knowledge. Thus reason does not have the option of assuming that the logical principles are without transcendental equivalent:

For with what right can reason, in its logical employment, call upon us to treat the multiplicity of powers exhibited in nature as simply a disguised unity and to derive this unity, so far as may be possible, from a fundamental power – how can reason do this, *if it were free to admit as likewise possible* that all powers may be heterogeneous, and that such systematic unity of derivation may not be in conformity with nature? Reason would then run counter to its own vocation...⁵¹

The principle must be assumed as transcendental. Indeed, it is even “an apodictic principle of reason”.⁵² As a synthetic a priori principle it has objective but indeterminate validity.⁵³ The validity of the principle is indeterminate because it does not determine anything specific about any object but the procedure by which the empirical, determinate employment of the understanding can be made consistent with itself.

Before I turn to the discussion of problems raised by the above exposition, I would like to summarize its key results:

1. The transcendent use of reason which has been shown to be impossible is replaced by an immanent use of reason.
2. The place of the rationalistic ideas of the soul, God and the world as a whole is taken by the idea of the complete system of all empirical concepts. The ideas of the soul, God and the world-whole retain some limited use. They guide the understanding in establishing the complete system of all empirical concepts.
3. Only on the presupposition of this idea of the complete system of all empirical concepts⁵⁴ can we have an empirical criterion of truth.
4. This indispensable assumption concerning the material content of knowledge must therefore be counted among the conditions for the possibility of empirical knowledge.
5. This assumption is transcendental and therefore has no transcendent import, i.e. the corrected, immanent use of reason is still open to the danger of illusion: the idea of the systematic connection of all empirical concepts can still deceive us. It appears to

⁵¹ *ibid.*, B 679 (original without italics).

⁵² *ibid.*, B 678.

⁵³ *ibid.*, B 691.

⁵⁴ Kant always speaks of the system of all concepts, yet one could equally speak of the system of all true statements as concepts are the result of statements.

be a system in which we grasp the essences of things. The system of all empirical concepts can, however, only be taken to reflect the current state of our approximation to the ideal of such complete knowledge and never regarded as an embodiment of complete knowledge.⁵⁵

6. The Transcendental Logic therefore consists of two equally important parts: the Transcendental Analytic and the Transcendental Dialectic. That the constructive part of the latter is so much shorter than the destructive part (45 pages as compared to the 260 pages preceding it) must not lead us to overlook its equal significance. It provides an indispensable additional transcendental principle, yet not like the Analytic of the *a priori form* but of the *a posteriori material content* of knowledge. Thus it must be included in a complete exposition of the principles that, according to Kant, govern and give an account of all empirical knowledge.

This may suffice as a summary of the main argument of the Appendix to the Transcendental Dialectic. In the next section I shall have some more to say about what in my view are the two most important questions that Kant's claims and arguments give rise to.

3. Two central Questions of Interpretation

I would now like to address two questions of interpretation. They concern the empirical criterion of truth and Kant's claim that unsystematic knowledge is insufficient and, indeed, defective. Both of these call for some clarification and contextualisation which I shall now try to provide. I shall begin by considering Kant's claim that without the principle of the systematicity of knowledge we would have no empirical criterion of truth.

3.1. The empirical Criterion of Truth

Because it is usually seen as concerned exclusively with the formal aspects of knowledge, one may think initially that the expression "empirical criterion of truth" sounds like an oxymoron in the context of Kant's epistemology. How does such a criterion fit into his theory of knowledge? Does not the whole of Kant's epistemology and his rejection of

⁵⁵ What Strawson says in his final observations on the Dialectic of the First Critique, having rejected Kant's Transcendental Idealism and affirmed the idea of "the world-whole itself" or "all-embracing reality", captures the provisional character of all empirical knowledge well: "How could inquiring human reason find a more appropriate object for its admiring and humbly emulative devotion than that which is at once the inexhaustible topic of its questions and the source of its endlessly provisional answers?", Strawson 1976, p. 230. I think that the same sentiments would have been shared by Kant. In the final chapter I intend to examine what follows from an acceptance of the No-Priority thesis for the interpretation of Kant's fundamental doctrine of Transcendental Idealism.

empiricism rest on the following set of fundamental philosophical commitments: (1) that there can be empirical truth only if not all truth is empirical; (2) that something can be empirically true only when there is a criterion of truth; (3) that this cannot be derived from experience; (4) that in addition to empirical truth there is thus also a need for priori truth; and (5) that empirical knowledge is therefore possible only if there is a priori knowledge.

This question overlooks the fact that although the possibility of empirical truth for Kant clearly depends on a priori principles, these principles by themselves do not *suffice* to guarantee the possibility of empirical truth. The “logic of truth”,⁵⁶ Kant’s characterization of the Transcendental Analytic, necessarily requires an additional criterion of truth, which is furnished by the systematic unity of the knowledge which is arrived at by the application of the principles of the understanding. Kant has referred to this need for complementation repeatedly throughout the previous sections of the First Critique. To mention just three examples:⁵⁷ (1) in § 19 of the B-deduction Kant distinguishes between two kinds of necessary unity or connection, i.e. that between representations in an empirical intuition and that “according to principles of the objective determination of all representations, in so far as knowledge can be acquired by means of these representations”⁵⁸ and makes it clear that he is solely concerned with the latter, i.e. not with natural, but with transcendental necessity; (2) towards the end of his systematic presentation of all principles of the pure understanding Kant distinguished between the mathematical and dynamical principles and then makes the important proviso that he is “as little concerned in the one case with the principles of mathematics as in the other with the principles of general physical dynamics”,⁵⁹ but only with the principles of pure understanding “in their relation to inner sense”,⁶⁰ with what he also calls (in a footnote to this passage) *metaphysical* as opposed to *physical* connection, because it is through these principles that the special principles of mathematics and dynamics become possible; and (3) he confirms this proviso in the proof of the Anticipations of Perception by stating that the causality of an alteration lies outside the limits of transcendental philosophy because “it presupposes empirical principles”.⁶¹

It is thus clear (a) that the inquiry conducted in the First Critique is restricted in a crucial way but also (b) that this restriction cannot *and does not claim to analyse all con-*

56 CopR, B 87.

57 We looked at these in the last chapter but they can suffer repetition.

58 CopR, B 142.

59 CopR, B 202.

60 *ibid.*

61 *ibid.*, B 213.

ditions for the possibility of empirical knowledge, i.e. they clearly need to be complemented by material conditions because the a priori transcendental principles underdetermine the possibility of empirical knowledge. This need for complementation is stated explicitly and developed comprehensively for the first time in the Appendix to the Transcendental Dialectic. In order to fulfil its function, this criterion must be specific. Only a concrete, determinate manifestation of systematicity can introduce it into empirical knowledge. Thus with his claim to the effect that without the systematicity of empirical knowledge we would have “no sufficient mark of empirical truth”⁶² Kant reaches the central claim of the argument developed in the Appendix. We must, however, immediately guard against a misinterpretation that one can easily fall into at this point. Although *sufficient* as a mark (or criterion), systematicity does not itself suffice as a guarantee of empirical truth. There can be such a thing as a “system of errors”! This cannot be over-emphasized. In my view it clearly demonstrates how robust Kant’s empirical realism is: the given retains its potential recalcitrance and elusiveness even in the face of a provisional systematic description of it and our ensuing belief of possessing knowledge, i.e. the truth about the world may fail to cohere systematically. Systematicity is something we have to look for but it is not guaranteed that we will find it.

Let us recapitulate at this point the principle steps of Kant’s argument thus far. The systematicity of knowledge demanded by reason, its coherence under one principle, is a necessary criterion of its truth. Such systematicity is a requirement regarding the truth of all knowledge. It also applies to a priori knowledge. The categories, the principles of the pure understanding and the ideas of reason each stand in a system of such categories, principles, or ideas. However, this a priori requirement of reason is as such purely formal and to that extent entirely indeterminate.⁶³ The systematicity required for specific empirical knowledge can only – and therefore must – be furnished by the material content of knowledge. The conceivability of empirical truth depends therefore on the assumption that the objects of the empirical world themselves manifest a systematic order. In the proof of the Second Analogy, where he shows that it is a necessary law of our sensibility that we advance to the following only through the preceding time, Kant says about the continuity of time that “only in appearances can we empirically apprehend this continuity in the connection of times”.⁶⁴ The very same must also be postulated of the systematicity of our knowledge: it can also be apprehended only in

62 *ibid.*, B 679.

63 See CopR, B 691.

64 *ibid.*, B 244. Baumanns captures this well when he observes: “The apperception indicates a priori the empirical special laws as its complement.” Baumanns 1997, p. 345.

appearances, i.e. in the concrete objects of the empirical world. The systematic unity demanded by reason must be found among these, they have to make good this requirement so to speak. According to Kant, the analytic unity of consciousness is possible only if a prior synthetic unity is given.⁶⁵ Yet we can see now that the opposite must be postulated as well. Only if the objects of our experience are accessible to a conceptual analysis can they be unified by the synthesis that cognitive activity for Kant essentially is. To put it another way: if the manifold of intuition could not be structured with the help of empirical concepts the categorical constitution of experience would be impossible.⁶⁶

Let us elucidate these rather abstract considerations by means of a simple example! If I see something that looks like an orange on its outside, yet on closer inspection is similar to an apple on the inside, do I have an apple in front of me which looks like an orange or an orange that looks like an apple? As long as no more than these two “surprises” occur, the concepts of “apple” and “orange” would not be endangered. We could introduce new concepts for these two peculiar sub-types of the familiar fruits. However, what would happen, if another apple or another orange looked like a banana on the inside or displayed such an inner consistency that we could not describe it and if similar unanticipatable surprises could never be ruled out? Clearly, the concepts apple and orange would lose their meaning, for concepts retain their applicability only as long as their use is justified by a set of well-grounded expectations. The synthesis which experience essentially consists in must not stop on the level of single empirical judgements. These must be unified into theories. Only if this attempt succeeds can the danger that our individual judgments may amount to nothing more than a rhapsodic aggregate be averted and can we make a claim to genuine knowledge.

The word “rhapsody” occurs only twice in the Critique of Pure Reason:⁶⁷ in the Analytic of Principles where Kant explains that experience depends on the synthetic unity of the appearances and that “apart from such synthesis it would not be knowledge, but a rhapsody of perceptions”,⁶⁸ and in the Doctrine of Method where it says that in accordance with “reason’s legislative prescriptions, our diverse modes of knowledge must

65 “Only in so far, therefore, as I can unite a manifold of given representations in *one consciousness*, is it possible for me to represent to myself the *identity of the consciousness in [i.e. throughout] these representations*. In other words, the *analytic* unity of apperception is possible only under the presupposition of a certain *synthetic* unity.” CopR, B 133, italics in the original.

66 On the relationship between the organization in empirical concepts and the constitution by categories see Baumanns 1997, p. 186ff.

67 I was able to establish this by searching the German online version of Kant’s works provided by the University of Bonn at <http://www.ikp.uni-bonn.de/kant/>.

68 CopR, B 195.

not be permitted to be a mere rhapsody",⁶⁹ but that they must form a system. I shall now turn to the discussion of Kant's claim that incomplete knowledge is deficient knowledge.

3.2. The essential deficiency of all empirical knowledge

The second question of interpretation I would like to address in more detail concerns Kant's above-quoted claim that the incompleteness of our knowledge leads us to regard it as "deficient".⁷⁰ This is a remarkable assertion which has an unmistakably Platonic ring to it. In the *Phaedo* we read: "Then whenever anyone, on seeing a thing, thinks to himself "this thing that I now see seeks to be like another reality, but falls short and cannot be like that object: it is inferior".⁷¹ The similarity is striking. This is all the more surprising as Kant was an anti-Platonist.⁷² He mentions Plato in the opening section of the *Transcendental Dialectic* full of veneration but then immediately distances himself from Plato's theory of Forms. For Plato, the intelligibility of the world is guaranteed by the fact that the demiurg created the world constantly looking towards the unchangeable patterns of the eternal ideas.⁷³ However, as we saw earlier, Kant tones down the idea of a "wise architect" of the world to a merely necessary assumption. However, for a comparison between Plato and Kant it is instructive to compare the "dogmatic slumbers" with the situation of those chained to a life in the cave in Plato's simile in the *Republic*. Whereas, for Plato, it is possible to leave the cave and gain knowledge of the objects which cast the shadows on its wall, an awakening from the dogmatic, pre-critical sleep merely consists in becoming aware of the true status of the empirical world as a world of appearances rather than of things in themselves. No other and more real objects are apprehended or now regarded as knowable. The Critical philosophy merely consists in a deepened insight into the true status of the empirical world without transcending it in any way. However, the proviso that we are dealing with appearances only must not be

69 *ibid.*, B 860.

70 See also *Prolegomena* § 60: "So I find that the Psychological Idea (however little it may reveal to me the nature of the human soul, which is higher than all concepts of experience), *shows the insufficiency of these concepts plainly enough*, and thereby deters me from materialism..." (A 187, italics added).

71 Οὐλοῦν ὁμολογοῦμεν, ὅταν τίς, τι ἰδῶν, ἐνοήσῃ ὅτι « βουλευαί μὲν τοῦτο ὁ νῦν ἐγὼ ὄρω εἶναι οἷον ἄλλο τι τῶν ὄντων, ἐνδεῖ δὲ καὶ οὐ δύναται τοιοῦτον εἶναι οἷον ἐκεῖνο, ἀλλ' ἐστὶν φαυλότερον » *Phaedo*, 74d. (translation by Gallop).

72 For a comprehensive discussion of Kant's relationship to Plato see the excellent study *Formen des Anti-Platonismus bei Kant, Nietzsche und Heidegger* by Patt.

73 Cf. *Timaios*, 28a. In creating the world the demiurg "looks to the unchangeable and builds the form of his work after an unchangeable pattern" (ὁ δημιουργὸς πρὸς τὰ κατὰ ταῦτα ἔχον βλέπων ἀεὶ): This makes it conceivable how knowledge of the essences of things is possible. Reality and knowledge are equally intimately related in the *Republic* in the simile of the cave. Here it is the same sun whose light accounts for the knowability of things whereas its warmth is the cause of their being. Kant refers to the view expressed here in the *First Critique* at B 370: "For Plato ideas are archetypes of the things themselves, and not, in the manner of the categories, merely keys to possible experiences. In his view they have issued from highest reason, and from that source have come to be shared in by human reason..."

seen as having any pejorative implication. One of the problems that an interpretation of Kant's central doctrine of Transcendental Idealism must address is the contrast between the appearing "substrate of nature" (Kant's reference to the ground of the appearances in the Third Critique),⁷⁴ on the one hand, and the merely problematic things in themselves, on the other. The most illuminating text on this difficult problem is to be found, in my view, in a passage from the section on the contrast of Phenomena and Noumena (A 251f). I would now like to provide a concise summary of what I take to be Kant's core argument in this passage.

The reason why we are not satisfied by the mere thought of a substrate of sensibility and assume, in addition to the phenomena, objects that are only accessible in thought, i.e. noumena, is that sensibility only gives us representations which are conditioned by our subjective forms of apprehension. The idea of a representation implies that there is something that is represented which, in itself, is not appearance but an object entirely independent of our sensibility. The object to which we relate the whole of appearances is the transcendental object. It is the totally abstract thought of an unknown something. It cannot be called a noumenon because we do not know what it is in itself. Now the thought of a noumenon, i.e. of a thing which is not considered as an object of sensibility but as a thing in itself, is not self-contradictory. We cannot claim about our sensibility that it is the only possible way in which objects can be given so that the concept of a noumenon is necessary in order not to extend our sensible intuition to the way things are in themselves. Yet, ultimately, we cannot even comprehend the possibility of noumena and the sphere outside the appearances is entirely empty for us. So while we have an understanding that reaches problematically beyond appearances, not only do we have no intuition that could give us objects of pure thought outside sensibility, we cannot even conceive of the possibility of such an intuition. The concept of a noumenon is therefore merely a limiting concept (a *Grenzbegriff*) to curb the pretensions of sensibility and allows a negative use only. However, the thought of something that corresponds to our sensibility, the substrate of nature which "materializes" our sensibility, as it were, is indispensable. It is a key concept of Kant's Transcendental Idealism, without which it cannot be formulated. We should be content with the idea of this totally unknown ground of the appearances. The thought of a noumenon should be distinguished from this. It only arises if we are *not* content with this idea of a totally unknown ground that appears. Yet we have to concede that the concept of a noumenon

74 Compare the second introduction to the *Critique of Judgement*, B LVI.

is entirely empty. It can merely serve us in helping to avoid falling into the illusion that the things we can come to know are things in themselves. Some critics read Kant's epistemology as a theory according to which our knowledge is barred from access to things in themselves. They assume a separate world of such things. Thus Thomas Nagel says: "Kantian transcendental idealism is a thesis not about the phenomenal world but about the relation of the phenomenal world to the world as it is in itself."⁷⁵ In my view even the brief paraphrase above is sufficient to show that this view is implausible. On the contrary, it appears to follow from Kant's theory that all attempts to establish the nature of this relation of the phenomenal world to the putative world as it is in itself are doomed to failure. It seems that Kant's reference to things in themselves is not the kind of untenable metaphysics he wanted to undermine but merely a way of limiting the scope of our knowledge. Kant does not postulate the existence of things in themselves.⁷⁶ The fact that the idea of a thing in itself contains no contradiction suffices to guard against the dogmatic equation of the world of appearances with the *omnitudo realitas*. This is the sole function of the concept. In the words of Ottfried Höffe: "Neither is ever everything known nor is everything that is knowable all there is."⁷⁷

In a theological context we find Aquinas making the following claim about the incompleteness and deficiency of our knowledge which addresses the problem under discussion: "God is not said to be incomprehensible because there is something in him that is unintuitable, but because he is not intuited as completely as he is intuitable."⁷⁸ What Aquinas says about God here is certainly true of the world: how could we ever be justified in assuming that we have come to know it in its entirety? What criterion could there be to decide that we have come to know all there is to know? Even our concepts of individual kinds of things are never complete and comprehensive,⁷⁹ let alone the body of our overall knowledge.⁸⁰

What Kant says about individual objects, i.e. that we cannot compare our judgements directly with them but only with further judgements about them,⁸¹ also applies to

75 Nagel 1997, p. 93.

76 Compare the following statement from § 78 of the Third Critique: "But now it is *at least possible* to consider the material world as mere phenomenon, and to think as its substrate something like a thing in itself (which is not phenomenon)..." (B 352) The existence of things or the thing in itself is not dogmatically assumed. The existence of a substrate, however, is not just possible. The possibility applies to the fact that it may be "something like a thing in itself". I will come back to this difficult issue in the final chapter.

77 Höffe 1983, p. 201.

78 Non propter hoc Deus incomprehensibilis dicitur, quasi aliquid ejus sit, quod non videatur, sed quia non ita perfecte videtur, sicut visibilis est. (J. Pieper 2000, p. 219).

79 In chapter 4 I will briefly look at Kant's theory of definition and we will see that, for Kant, empirical concepts are indefinable.

80 CopR, B 756.

81 See CopR, A 104.

our given state of knowledge. We never know how much there is we do not know. Thus even if we were in possession of a complete theory of everything, we could not know that we are. In 1901 Planck was discouraged from studying physics as this science, he was told, was approaching completion and there was little if anything left to be accomplished in this branch of the natural sciences!⁸²

Despite their different reasons for it Plato and Kant agree on the view that our empirical knowledge is deficient. For Kant, empirical concepts are essentially open and indefinable. This makes all our knowledge provisional. Thus we may assume that what Dummett says about a future cosmology, that he “should be surprised to be told that five centuries from now people would not regard the conceptions of present-day cosmologists as being as far from the truth as we regard the Ptolemaic System”,⁸³ would have found favour with Kant.

4. The rival interpretations of three critics

In order to further articulate and defend my own interpretation of the Appendix to the Transcendental Dialectic, I would now like to examine and critically assess three rival interpretations of the views Kant develops in this important text. I shall look in some detail at three of the more comprehensive research papers I have studied. The close engagement with these three texts has helped me greatly to clarify my own interpretation. The texts in question were published by Wartenburg, O’Shea and, most recently, Geiger and I shall examine them in the order in which they appeared.

4.1. Wartenburg’s interpretation of Kant’s Principle of Reason

Wartenburg begins his article *Order Through Reason*⁸⁴ by maintaining that, according to a widely-held view of Kant’s philosophy of science, it presents a surprising contrast to his views on the theory of knowledge. Rather than trying to find a subtle balance between the claims of rationalism and empiricism, as he tries to do in his epistemology generally, in the philosophy of science one finds Kant firmly on the rationalist side, because he is seen as providing an a priori justification of Newtonian science. However, Wartenburg thinks that this would be a simplified account. Instead, he sees Kant as trying to forge a middle path between empiricism and rationalism in the philosophy of science too. Wartenburg thus concludes that the account the Critique of Pure Reason gives of the

82 See Polkinghorne 2002, p. 4.

83 Dummett 2004, p. 58.

84 Wartenburg 1979. “Order Through Reason, Kant’s Transcendental Justification of Science”. In: *Kant-Studien*, pp. 409-424.

overall conditions for the possibility of experience is more complex than is often assumed. I shall first summarize the main stages of Wartenburg's article and then comment on his claims and arguments.

According to Wartenburg, while Kant accepts that theories are subject to confirmation and falsification, he realizes that empirical testing requires assumptions that require a priori justification. He sets out the aim of his paper as follows:

What I wish to demarcate are precisely those principles that Kant takes to be necessary for the possibility of science, those principles that legitimize our belief in science as giving us insight into the nature of the phenomenal world.⁸⁵

Wartenburg defends his interpretation of Kant's philosophy of science in three steps. He begins by (1) providing an exposition of Kant's views on the methodological characteristics of the empirical sciences. He then (2) analyses Kant's attempt to show that the method of empirical science can be given an a priori justification if one assumes the principle (SN) = Nature is systematic. His aim is to show that Kant's epistemology has the resources to prove a priori that the phenomenal world has an inherent systematic structure. In the third and final step, (3) Wartenburg defends his reading of Kant against two critical charges: (i) that it does not do justice to the regulative nature of reason and (ii) that it violates Kant's own critique of traditional metaphysics. I will omit the details of Wartenburg's textually rich account and concentrate instead on his central claims.

According to Wartenburg, Kant's central insight is that we need theories to guide our empirical testing, that the way we approach nature by experiment is necessarily informed by theoretical assumptions. Thus the question arises as to what guides us in the way in which we put forward hypotheses about the structure of the phenomenal world. Wartenburg identifies as Kant's answer to this question that what guides us in the formation of our theories is the desired goal of a *unified* empirical knowledge because the aim of science is the unification of the phenomena of the empirical world. However, while we take science to inform us about the structure of the mind-independent empirical world, we follow a method that is guided by our own interest, i.e. to be in the possession of a unified corpus of knowledge. This then raises the question as to how we reconcile these seemingly contradictory features of the practice of science. Wartenburg answers this question by stating the central claim of his paper: i.e. we are justified in treating our theories as more than convenient devices for the unification of our representational scheme because according to Kant:

⁸⁵ Wartenburg 1979, p. 409.

...nature has the sort of systematic order which particular scientific theories claim it to have. Although we do not have a priori knowledge as to which particular theories are the true ones, we do know that nature itself is systematically ordered.⁸⁶

Thus, according to Wartenburg's interpretation of Kant, we know on a priori grounds that science is able to lead us to the truth about the empirical world. But how, according to Wartenburg, does Kant justify this claim? Among the arguments that "comes nearest to such a justification"⁸⁷ Wartenburg identifies the much-quoted passage in which Kant paints the horror-scenario of a world of appearances of such a great variety that the most powerful understanding could not discern the slightest degree of similarity among them. Kant concludes this passage with the statement: "If therefore the logical principle of genera is to be applied to nature ... it presupposes a transcendental principle".⁸⁸ In line with his concession that Kant's argument only comes close to the justification of the Principle of the Systematicity of Nature (SN), Wartenburg concedes further that Kant only wants to establish our need "to *assume* a metaphysical counterpart"⁸⁹ of the methodological scientific principles which make us strive for the unification of our knowledge, i.e. the principles of generalization, specification and affinity. However, he chooses to "ignore this and to consider the adequacy of the argument in establishing (SN) itself." He clearly states that from this point of his argument onwards he leaves Kant's more modest claim behind and argues not for what Kant actually said but for what he thinks Kant could have said. Evidently, Wartenburg thinks that Kant did not realize the full strength of the arguments at his disposal. He thinks that Kant was unduly cautious in his claims. Thus he takes upon himself to argue for what Kant himself should have wanted to prove but apparently did not want to prove.⁹⁰

So why, then, does Wartenburg think that the systematicity of nature is an a priori knowable metaphysical truth? He thinks that this can best be illustrated by taking a look at the Second Analogy of Experience. In his view it establishes as a fact about the empirical world that the objects of our experience must stand in causal interaction with each other. In the proof of this causal principle he sees a strategy at work similar to that in Kant's proof of the systematicity of nature:

86 *ibid.* 414.

87 *ibid.* 416.

88 CopR, B 681.

89 Wartenburg 1979, p. 417 (*italics added*).

90 See his criticism of what he regards as the weakening of Kant's position in the Third Critique. Against such a reading I contend that there is no shift between the First and the Third Critique. There is clear textual evidence that a concern with purposiveness and teleological thinking is already present in the First and not a new item in his theory that first enters the scene in the Critique of Judgement. I will have more to say about this when I look at Guyer's view on this same issue.

The argument is transcendental not because it moves from our beliefs to truth about the world, but because it shows what complex things must be true of the world for even our simplest beliefs to be true of it.⁹¹

In the third section of his article Wartenburg defends his interpretation against a possible objection. He prepares the exposition of this objection by giving the interpretation of Kant's views on Reason advanced by Bennett. According to Bennett we find in Kant a "slide" from the view that the principle of Reason is merely a regulative imperative to the view that it is an "indicative that describes the world".⁹² This slide is natural because, by urging us to unify our knowledge in line with reason's intrinsic quest for the unconditioned, the principles appear to embody more than just heuristic advice. Bennett sees Kant succumbing to this tension and contends that, as a consequence, he "drifts into saying"⁹³ that the merely regulative is constitutive.

However, according to Wartenburg, Bennett fails to appreciate the difference between the two types of principles by not seeing that the regulative principles are needed to ground the advice embodied in the methodological principles of science. As Wartenburg sees it, what hinders him from appreciating the force of Kant's argument is Bennett's belief that we can equate what is constitutive with what provides insight into the nature of reality and what is regulative merely with what follows from our speculative interest.⁹⁴ In an attempt to clarify the difference between constitutive and regulative rules, Wartenburg then considers the rules of chess. First, there are the rules defining the constitutive moves the different pieces are allowed to make. Yet, these do not suffice to play the game. We also require procedural rules which define how chess is played. Wartenburg then points out the following: if, contrary to the truth of the matter,⁹⁵ we regarded it as mistaken to expect the procedural rules of chess to have descriptive content, we would be as wrong and, indeed, wrong in the very same way as Bennett is with regard to Kant's claim that the regulative principle of Reason entails knowledge

91 Wartenburg 1979, p. 418.

92 Bennett 1972, p. 276.

93 *ibid.*

94 Harshly criticizing the "crudity" (p. 420) of this juxtaposition of the regulative and the constitutive Wartenburg blames it on Bennett's failure "to specify the nature of the reality that he takes constitutive principles to give us insight into." (*ibid.*) Wartenburg then claims that one can deny that the principle of systematicity is constitutive in the way he takes the categories to be constitutive and at the same time maintain that that principle, notwithstanding this concession, is still a "member of the framework of principles necessary for the possibility of experience" (p. 421). It is a member of this framework because there are principles which, while not constitutive of the *objects* of a practice, i.e. of science, are nevertheless constitutive of the specification of that *practice*.

95 There are certain positions of the pieces on the board that we know could not occur in a game of chess. For example, we could see from the position of the pieces that the turn of one side was skipped. Thus the procedural rules also provide knowledge about the possible transformations of the pieces on the board.

about nature.⁹⁶ (This conclusion is based on Wartenburg's underlying assumption that in order to guarantee the rationality of a certain activity one must know that it is possible to succeed in the goal of that activity.) This may suffice as a summary of Wartenburg's argument in defence of the metaphysical status of the systematicity of the empirical world. I will now try to assess it.

4.2. Reply to Wartenburg's interpretation

As before, I shall limit myself to comments on central claims which strike me as particularly problematic. These are: (1) Wartenburg's interpretation of the Second Analogy and (2) the chess analogy and the related claim that to engage in an activity without knowing that it is possible to succeed in its goal is irrational. Finally, I shall (3) point to some internal inconsistencies of the argument.

(1) *Wartenburg's interpretation of the Second Analogy.* Based on the classification of the different interpretations of the Second Analogy I suggested in chapter one, Wartenburg's interpretation is a strong one, i.e. he assumes that the Second Analogy proves that the objects of our experience must stand in causal interaction with each other. In my view it is this misunderstanding of the Second Analogy that leads him to misinterpret the principle of Reason too. I think this misunderstanding comes about in the following way. If we assume that the task of science is to discover the causal laws of nature and that special causal laws can only be formulated if nature is structured in such a way that it allows for the building of empirical concepts (assuming that only kinds or types of events can follow one another necessarily, i.e. that necessity implies regularity), we obtain the following argument for the principle of the systematicity of nature. If we know that:

- (a) the objects of our empirical knowledge stand in causal interaction, and if
- (b) special causal laws require detectable similarities between these objects

we then arrive at the following conclusion:

- (c) the empirical world must have a systematic order.

Thus it appears to me that Wartenburg derives the Principle of the Systematicity of Nature from an assumed strong interpretation of the Second Analogy in the above way.

⁹⁶ The regulative principle of Reason is not just a convenient guideline for scientists. Thus Wartenburg crucially claims the following: "Just as chess requires the procedural rules to enable us to perceive the pieces as forming a possible position in a game of chess, science requires that we presuppose a system of nature in order that we are able to treat scientific theories as telling us the truth about the phenomenal world. And just as the procedural rules tell us something about which transformations can count as moves in a game the regulative principle of Reason tells us something about the structure of the phenomenal world." (*ibid.*, p. 423).

The view of causality that lies at the basis of this argument has been diagnosed by Robert Spaemann in the following way:

The abolition of the *causa finalis* became possible only because one included its essential function without further ado in the definition of the *causa efficiens*, and then went even further: one now defined it through the *causa finalis* in the first place, i.e. by the regularity of the nexus of events, the law of nature.⁹⁷

However, as I tried to show in chapter one, Kant separates the necessity and regularity aspects of the laws of nature, the metaphysical laws of the understanding from the physical laws governing particular kinds of events, which is precisely why teleological thinking plays such a prominent role in his philosophy. Because he adheres to a strong interpretation of the Second Analogy, Wartenburg confounds these two types of necessity in the way Spaemann analyses and can, therefore, deduce the regularity or systematicity of nature from the way he understands the Second Analogy, i.e. that it proves the necessity of the special empirical laws of nature. When Wartenburg contends that the transcendental nature of the argument for the Second Analogy does not consist in a move from our beliefs to the truth about the empirical world, but rather in its demonstration of “what complex things must be true of the world for even our simplest beliefs to be true of it”,⁹⁸ I also find this argument unconvincing. At the bottom of Wartenburg’s argument lies the unquestioned assumption that the world could not be such that our simplest beliefs about it might be false. Yet what reason do we have to be certain that they are not? Why should what we must assume to be true have to be true? The systematicity of the empirical world is undoubtedly a necessary assumption of all science. However, we do not justify a claim by showing that it is necessary to make it. A need can never be the basis for a belief in the reality of that which would satisfy it, not even when this assumption is a necessary and unavoidable one. Wartenburg does not distinguish between the justification of a principle and the justification of its use. One can justify the use of a principle even if one cannot justify the principle itself. Thus Kant justifies the assumption that we are free, although he concedes that we cannot prove that we are, but only assume it as a “Postulate of practical Reason”.⁹⁹ Following this analogy with the moral case, one could describe the systematicity of nature as a Postulate of theoretical Reason. Wartenburg is right to point out that it has a different status from

97 Robert Spaemann: “Teleologie und Teleonomie”. In: *Metaphysik nach Kant*, p. 555. (“Die Abschaffung der *causa finalis* wurde überhaupt erst dadurch möglich, dass man deren entscheidende Funktion kurzerhand in die Definition der *causa efficiens* mit aufnahm, ja die *causa efficiens* nun überhaupt erst dadurch definierte: durch die Regelmäßigkeit des Ereigniszusammenhangs, das Naturgesetz.”)

98 Wartenburg 1979, p. 418.

99 See his *Groundwork of the Metaphysics of Morals*, title of the second section of chapter III: “Freedom must be presupposed as a property of the will of all rational beings” (A 447).

empirical hypotheses. In the same way that the general question as to whether sense experience can lead us to the truth about the empirical world cannot be decided by sense experience, the verifiability of particular empirical hypotheses depends on something that cannot be verified in the same way as any specific empirical hypothesis. It has a more basic status. But that does not prove the assumption to be a metaphysical insight into the structure of the phenomenal world, i.e. it is not inconceivable that our simplest beliefs about the world might be false.

(2) *The chess analogy.* All analogies are only partial. However, it appears to me that there are substantive differences between the playing of chess and the practice of science which, in my view, lead to the breakdown of the analogy between the two. A chess board is a finite space with a given, definitive structure that we can survey in its entirety. This enables us to say with certainty that the two sets of rules that govern the game will lead to a final outcome, i.e. either checkmate or stalemate. Towards the end of § 68 of the *Critique of Judgement*, Kant says that “we have complete insight only into what we can ourselves make and accomplish according to concepts.”¹⁰⁰ We produce chessboards “according to concepts”. However, nature is not our product, only our theories about it are produced by us. And according to Kant these only look upon it “as if” it were the product of an understanding different from ours. Thus Wartenburg seems to me to be begging the question because for his analogy to work he has to assume already what he sets out to prove. i.e. that all of nature has a definitive structure.

I also find Wartenburg’s claim that it is irrational to engage in an activity without knowing that it is possible to succeed in its goal unconvincing. To mention just one simple counter-example: why should it be irrational to try to obtain help when one finds oneself on a sinking ship in the middle of the ocean, e.g. by launching flares, although one cannot be certain of being noticed by anybody? Contrary to Wartenburg’s claim, it would appear irrational to me if the uncertainty as to whether one will be noticed would stop one from making an attempt to get help. In such a case it seems enough to know that failure to get help is not certain. Likewise, the fact that we will in fact succeed in finding empirical laws when confronted with hitherto unknown domains of reality is not certain because we do not know whether systematicity is intrinsic to all parts of empirical reality and thus we do not know either whether there is any real possibility of succeeding in our objective of finding laws. But that does not make the attempt to find such laws irrational.

100 CoJ, B 310.

(3) *Internal inconsistencies.* At one stage of his argument Wartenburg says the following: "Although we do not know a priori exactly how and to what extent such systematicity is instantiated, we know that nature must have such systematic order."¹⁰¹ This statement strikes me as self-contradictory or at least imprecise. How can Wartenburg do both: (1) concede that we do not know to what extent nature is systematic, and still (2) make the unqualified claim that nature is systematic? (1) implies that there may be parts of nature that are not systematic. But (2) is unqualified and thus the principle (SN) seems to be equivalent to: *all* of nature is systematic. Wartenburg appears to be insensitive to this inconsistency. The same criticism applies when Wartenburg maintains that conducting a scientific experiment in accordance with a given hypothesis is rational "because we can, to some extent, guarantee the possibility of its success."¹⁰² Again, a guarantee "to some extent" is an oxymoron for it takes away with one hand what it gives us with the other. A guarantee is absolute, yet the apposition "to some extent" makes it relative. Thus I reach the following conclusion: I believe that what Wartenburg advances as a proof of the systematicity of the empirical world would have been regarded by Kant as a rationalist dream and that in his critical period he left all such dreams behind – including the one Wartenburg thinks Kant could have proved. It seems to me that Wartenburg tries to deduce from the mere idea of an experience that reaches the truth about the empirical world what any world we can experience must be like. Kant makes the following proviso against such deductions in connection with the Second Analogy:

Had we attempted to prove ... from concepts ... that every event presupposes something in the preceding state upon which it follows in conformity with a rule... all our labour would have been wasted.¹⁰³

In my view the principle of purposiveness is as conditional as the principle of causality. Just as the application of the latter depends on the contingent existence of special empirical laws, the application of the former depends on the unanticipatable, contingent systematic order of nature's objects and of the laws that govern them. Finally, therefore, I think that Wartenburg is mistaken in ignoring the modesty of Kant's claim that the systematicity of nature is only a necessary assumption and in trying to prove a more ambitious claim. He attempts to establish the systematicity of nature as an unconditional "metaphysical truth about the empirical world". Yet I would maintain that the argu-

101 Wartenburg 1979, p. 418.

102 *ibid.*, p. 419.

103 CopR, B 264.

ments he advances for this ambitious claim do not establish it. Kant's arguments cannot and were not designed to bear the weight Wartenburg's interpretation puts on them.

4.3. O'Shea's interpretation

I shall first briefly summarize the argument presented in O'Shea's article *The Needs of Understanding: Kant on Empirical Laws and Regulative Ideals*¹⁰⁴ and subsequently comment on some of the claims defended therein.

This article weaves together a rich collection of relevant material from Kant's major writings and in it O'Shea sets out to address two perplexities concerning Kant's theoretical philosophy. One is the proper understanding of the relationship between the transcendental laws of the understanding and the empirical laws derived from experience. The other is the problem relating to the epistemic status of the regulative maxims of reason or reflective judgement. These are seen as either merely heuristic or as possessing some form of objective validity. Both of these issues are of the highest possible relevance for my thesis.

O'Shea believes that the two problems can be "mutually clarified by bringing a particular interpretation of the one to bear on the other."¹⁰⁵ Whereas this might not initially be obvious, O'Shea contends that there exists a "tight connection" between these two issues. He sets out the aim of his article as follows:

I will argue that a proper understanding of the sense in which the argument of the Second Analogy is intended to validate the judgement that there exist particular empirical laws – that is, necessary connections among events characterized in terms of empirical kinds – will help us to understand the sense in which the regulative maxims of reason are *objectively valid*.¹⁰⁶

He defends the view that the Second Analogy justifies empirical existence claims that the understanding alone is powerless to determine. Such existence claims or demands, as he subsequently calls them, are characterized in the texts dealing with the regulative maxims as cognitive needs. While one would find in these texts that reason's interest in the completeness of our knowledge generates the regulative ideal of systematicity, which transcends our necessarily limited experience and to that extent lacks objective validity, reason's maxims are nevertheless required if the empirical needs of the understanding are to be satisfied:

¹⁰⁴ *International Journal of Philosophical Studies*, vol. 5 (2).

¹⁰⁵ *ibid.*, p. 216.

¹⁰⁶ *ibid.*, p. 217 (italics in the original).

I contend that the latter are consequently the source of the a priori 'objective but indeterminate validity' that is posed by those regulative principles.¹⁰⁷

After this brief summary of the central claim O'Shea seeks to establish, I shall now examine his arguments in greater detail.

4.4. Reply to O'Shea's interpretation

Based on the brief summary of O'Shea's article presented above we can see that he makes the following three related claims:

- (1) The Second Analogy validates the claim that empirical laws exist.
- (2) That the Second Analogy validates the claim that empirical laws exist, helps us to understand the validity of Reason's maxims.
- (3) Reason's maxims satisfy the needs of the understanding.

Set out in this way, it strikes me that claims 2 and 3 appear to be in conflict with each other: how could it be possible that the Second Analogy helps us to understand the validity of the maxims of reason while, at the same time, these maxims satisfy the needs of the understanding? On the face of it this looks like a circular argument. Reason is taken to satisfy the needs of the understanding and the understanding, thus satisfied, is then taken to be the source of the objective validity of the maxims of reason. Let us look at the argument more closely.¹⁰⁸ Throughout his article O'Shea refers to the strictly warranted demands of the understanding as the *source* of the validity of the maxims of reason. In a similar way he says that "the objective validity of our various judgements asserting the existence of empirically necessary connections" is derived from the "strict requirements of [the] understanding".¹⁰⁹

This immediately raises the following set of related questions: how could the needs or requirements of the understanding be the source of the a priori objective validity of the regulative principles? How can a mere need ground a validity other than that of an assumption, the objectivity of which must, as with all assumptions, remain problematic? Moreover, how could the fact, that we *necessarily* have to want something, change this? The problem also poses itself from the other perspective whereby it is supposed to be reason's maxims that are necessary "for the possibility of satisfying the empirical needs of understanding".¹¹⁰ How can the mere maxims of reason satisfy the needs of the under-

¹⁰⁷ *ibid.*, p. 217f.

¹⁰⁸ O'Shea's article is so detailed that, as before, I will have to restrict my discussion to the central aspects of his argument.

¹⁰⁹ *ibid.*, p. 224.

¹¹⁰ *ibid.*, p. 217.

standing? It seems to me that the needs of the understanding can only be satisfied, i.e. truly fulfilled, if it is actually the case what the maxims can only demand. In addition to these problems, in my view, O'Shea's interpretation also faces the following additional problems. When discussing the contrast between the reason-based ideal of systematicity and the categorial framework of nature, he refers to the "constitutive objective validity of genuine categorial object-concepts"¹¹¹ and appears to overlook the fact that his chosen example of a principle of the pure understanding, the Second Analogy, is clearly described by Kant as only regulative:

These first principles may therefore be called constitutive. It stands quite otherwise with those principles which seek to bring the *existence* of appearances under rules *a priori*. For since existence cannot be constructed, the principles can apply only to the relations of existence, and can yield only *regulative* principles. We cannot, therefore, expect either axioms or anticipations. ... An analogy of experience is, therefore, only a rule according to which a unity of experience ... may arise from perception. ... It is not a principle *constitutive* of the objects, that is, of the appearances, but only *regulative*.¹¹²

Thus, it would seem possible to say that, in a way, the principle of causality and the principle of judgement (or the related maxims of reason) are on a par, for both are only *Suchanweisungen*, i.e. "heuristic guidelines". Rather than examining further individual claims made in O'Shea's article, I would now like to go straight to the culmination of his argument. O'Shea quotes as decisive evidence in support of his interpretation a crucial passage from the second part of the Appendix to the Transcendental Dialectic. Arguably, this is one of the most important passages from the entire First Critique, the point where the argument of the appendix can be said to arrive at its most wide-ranging claims. In it Kant summarizes the positive contribution¹¹³ of the transcendental Dialectic to the transcendental Logic in the following way:

The unity of reason is the unity of system; and this systematic unity does not serve objectively as a principle that extends the application of reason to objects, but subjectively as a maxim that extends its application to all possible empirical knowledge of objects. Nevertheless, since the systematic connection which reason can give to the empirical employment of the understanding not only furthers its extension, *but also guarantees its correctness*, the principle of such systematic unity is so far also objective, but in an indeterminate manner (*principium vagum*).¹¹⁴

I must confess that on my first reading of this passage, quoted by O'Shea as clear evidence in support of his own interpretation of the relationship between the principles of

111 *ibid.*, p. 233.

112 CopR, B 221f. This appears to contradict what Kant says later in the *Methodenlehre* where he claims that the dynamical principles of the understanding are constitutive.

113 In chapter one we had seen that Strawson's view, that it is purely a demolition exercise, overlooks the constructive element of the Appendix to the transcendental Dialectic.

114 CopR, B 708 (first italic added).

the understanding and the maxims of reason, I had very serious doubts about the correctness of my own view on the issue: should Kant really have thought that systematicity, a merely regulative principle, *guarantees* the correctness of the empirical employment of the understanding? This contradicted everything I thought I had understood. However, when I checked the Kemp-Smith translation against the original I found that it contains an error that seriously distorts the meaning of the text.¹¹⁵ In the German original, the word translated by Kemp-Smith as “guarantees” is “bewährt”.¹¹⁶ However, “bewähren” means “to corroborate”, which cannot possibly be translated as “to guarantee”. If A guarantees B it implies that A is a sufficient condition for B, whereas if A corroborates B then A may be a necessary but is clearly not a sufficient condition for B. For Kant, the systematicity of empirical beliefs is a necessary condition for their claim to be true. However, systematicity is not a sufficient condition for truth as is implied by Kemp-Smith’s mistranslation. There is, after all, such a thing as being consistently or systematically wrong and this is often taken, albeit mistakenly, by those who are wrong as an indication of the correctness of their false beliefs.

That the employment of the principles of the understanding needs to be “corroborated” may at first seem strange. However, we must not overlook that the Second Analogy, despite its apriority, is no more than a *regulative principle*, as we have just reminded ourselves, “a rule according to which a unity of experience ... *may arise*”.¹¹⁷ The fact that at this crucial point of his argument of the Transcendental Dialectic, where he summarizes its positive outcome (“We are now in a position to have a clear view of the outcome of the whole Transcendental Dialectic ...”),¹¹⁸ Kant says that the employment of the understanding is just *corroborated* through the systematicity demanded by reason, i.e. that systematicity can never be a proof of the truth of what we take to be our knowledge, appears to me to show that O’Shea’s and Friedman’s strong interpretation is not tenable. For: if the strong interpretation *were* right, the employment of the under-

115 Guyer, who is likely to have consulted Kemp-Smith’s translation when producing his own, either adopts or repeats Kemp-Smith’s mistake (if he did not consult the earlier translation). It is astonishing that such a significant translation error at such a crucial stage of the argument of the First Critique has gone unnoticed. In a recently published article in the *Cambridge Companion to Kant and Modern Philosophy* edited by himself, Guyer claims that it is Kant’s view “that laws must be thought of as part of a system in order to give them the necessity that they need to be laws at all” (p. 552). This, in my opinion, is a mistaken view of Guyer’s, i.e. that systematicity can be a source of necessity, is consistent with his mistranslation of the sentence at B 708. The latest translation of the *Critique of Pure Reason* to be published in English, that of Werner Pluhar, translates “bewähren” as “to verify” and thus misunderstands the original in the same way as Kemp-Smith and Guyer did before him. However, aware of the difficulty of the text and as though in doubt about the correctness of this reading, Pluhar provides the original German in a footnote (p. 646).

116 Kemp-Smith has probably confused “bewähren” and “gewähren” (to grant).

117 CopR, B 222 (italics added).

118 CopR, B 708.

standing and its principles would *not* have to pass such a test. Experience would then just be a case of the mere instantiation of the understanding and its principles or rules. If the employment of the understanding is not just a case of “rubber-stamping” what we know already, then our epistemological situation is far more precarious than the strong interpretation assumes. Yet, as we saw in the first chapter, for Kant, the principles of the understanding come with no guarantee of their applicability: Kant’s answer to Hume is more subtle and less straightforward than advocates of the strong interpretation of the Second Analogy assume. I think we can fully agree with O’Shea’s claim that the two problems of the correct interpretation of the Principle of Reason and of the Second Analogy belong together and that there is a complex interplay¹¹⁹ between them, as law-likeness, though not the only one, is surely one important aspect of the systematicity of nature. In my view, however, reason’s demand for systematicity and the need of the understanding for empirical lawfulness are not separate but identical. If the interests of reason and the needs of the understanding formulate the same requirements for empirical knowledge and are thus on a par, there is no priority of one over the other. To regard the purely regulative as constitutive is to fall prey to the constant danger of dialectical illusion. With the assumption that we know with certainty that causal laws really exist, we succumb to a transcendental illusion. We regard that which we have to seek as already given and anticipate success for all our future efforts to find causes for changes which will allow us to describe them as events of a given type.

To sum up the argument of this section: if I have understood him correctly, O’Shea can ground the maxims of reason in the needs of the understanding only because he reads these maxims into the understanding. He does so in my view by interpreting the Second Analogy in such a way that it is meant to prove the existence of special laws of nature. Yet by assuming this, the regulative principles would seem to be involved already. He can then ground the maxims of reason, which are essentially concerned with a systematic and more than temporal order of the world, in the principles interpreted in this way. Yet we saw that the passage O’Shea cites as proof of the correctness of this interpretation turned out to have been a mistranslation.¹²⁰

119 *ibid.*, p. 218.

120 I would like to thank Dr O’Shea for the very generous way in which he responded in correspondence about his article and my understanding of it. This exchange has helped me considerably to reach greater clarity about my own views.

4.5. Geiger's interpretation

One of the more comprehensive interpretations of the Appendix to the Dialectic to have been published recently is Geiger's article *Is the assumption of a systematic Whole of Empirical Concepts a Necessary Condition of Knowledge?*¹²¹ Before I look at it in more detail I would like to mention a particular difficulty presented by this text. It is not always clearly distinguishable whether a certain point of Geiger's is meant to be a comment interpreting Kant or whether he is developing a philosophical position of his own that takes Kantian claims as its point of departure. Obviously there is nothing wrong with doing both, even in the same article, but in that case it is desirable that both aspects are more clearly separated. Thus when Geiger remarks that the categories "are *indisputably* necessary conditions of our knowledge of empirical objects" (p. 289, italics added) it is not clear who says this, i.e. Kant or himself. The context suggests that Geiger is merely paraphrasing Kant's views. But since it is not a matter of contention that Kant regards categories as indispensable for gaining knowledge of empirical objects, the reader has to assume that Geiger is expressing his agreement with Kant's claim. When reading the article it is not always clear (a) which conclusions Geiger thinks Kant drew from his arguments, (b) which conclusions Geiger draws from Kant's arguments, and (c) which conclusions Geiger thinks Kant should have but did not draw from his arguments.

Geiger begins by differentiating between a heuristic and transcendental interpretation of the Appendix to the Dialectic. According to the heuristic or minimal interpretation,¹²² the idea of the complete system of all empirical concepts is no more than a regulative ideal. The advocates of this reading point out that knowledge can exist independently of this ideal. After all, we use our most common concepts without ever worrying whether they stand in or can be arranged in a systematic connection. They thus maintain that the possibility of knowledge does not depend on the ideal of systematicity. According to these critics the question of the systematicity of knowledge becomes relevant only in scientific contexts. Against this merely heuristic interpretation Geiger defends a transcendental interpretation. According to this interpretation the possession of only a single empirical concept presupposes the idea of the hierarchical system of *all* empirical concepts as the meaning of an empirical concept can only be specified via additional empirical concepts that this concept is the kind term of:

121 In: *Kant-Studien* 2003, pp. 273–298.

122 Geiger takes MacFarland, H. Cassierer and Paul Guyer as belonging to this group of critics.

The idea of a systematic whole of empirical concepts is a condition of the very meaningfulness of *any* empirical concept, and so of our possession of any empirical truth.¹²³

Thus Geiger assumes that the question as to how empirical statements relate to the world can be equated to the question: "How do we account for the meaningfulness of empirical concepts?"¹²⁴ I would like to note immediately that Kant himself nowhere equates these two questions and that it is not obvious whether the latter problem can be accepted as identical to the former. On the contrary, intuitively it is not at all obvious that words could not have meaning unless they succeed in referring uniquely to aspects of the real world. In fact, for many of the words we successfully use in our everyday communication this is clearly not the case. Thus it is difficult if not impossible to isolate one object in the world that the word "sky" refers to. Consider the following three sentences: (1) The sky was cloudy. (2) The rocket disappeared into the blue sky. (3) They gazed at the stars in the night sky. Here "sky" does not refer to the same "entity" in the physical world. To spell out the meaning of these statements in scientific language one would have to refer to the atmosphere, the stratosphere and the constellation of the fixed stars in the visible cosmos.¹²⁵

To pursue the problem of the correct interpretation of the Appendix, I would now like to examine the grounds on which Geiger differentiates between the two rival interpretations characterized above. To do this we must first find out the nature of the disagreement between the heuristic and transcendental interpretations. This in turn requires us to clarify the exact relationship between:

- (a) the possibility of applying empirical concepts to objects,
- and
- (b) the presupposition that the objects of experience:
- (b1) do themselves constitute a system
- or
- (b2) merely allow that they can be arranged in a systematic whole

While the heuristic interpretation claims that (a), i.e. the applicability of empirical concepts to objects of experience, neither presupposes assumption (b1) nor the assumption (b2), the advocates of the transcendental interpretation claim that (a) presuppose one of the two assumption under (b). The difference between (b1) and (b2) is not discussed by

¹²³ See Geiger 2003, p. 274 (*italics added*).

¹²⁴ *ibid.*, p. 285.

¹²⁵ My attention was drawn to this particular example by a talk on work in progress given by Dr Andrew Jorgensen.

Geiger. Yet it would appear to be crucially important, since (b1) amounts to a far stronger claim than (b2). According to the passage quoted above, Geiger seems to advocate a version of (b1), indeed a very strong version of it, by claiming that the meaning of a single concept implies the idea of a systematic whole of empirical concepts, i.e. the idea of the one system of all empirical concepts. There are some passages from which it is not as clear whether Geiger defends what I have called the strong version of the transcendental interpretation, e.g. when he stresses the merely regulative nature of the idea. However, his commitment to the strong version of the transcendental interpretation is evident from the following claim:

The intelligibility of the system does not consist, of course, exclusively of conceptual relations. Every concept refers to a species of objects. Thus the ideal of a systematic unity of knowledge represents the *world of objects as fully intelligible*.¹²⁶

This system must be assumed to be given. If we only assume its possibility Geiger thinks that the meaning of empirical concepts becomes problematic. The two versions of the transcendental interpretation of the idea of the complete system of empirical concepts can be characterized more fully in the following way: the *strong version* of the transcendental interpretation assumes that systematicity is an intrinsic feature of nature itself, that it exists prior to the human activity of classification in empirical concepts and that it extends to the simplest concepts we use to describe our most mundane experience. The *weak version* of the transcendental interpretation does not assume that systematicity is an intrinsic feature of nature itself and that it must not be presupposed to exist prior to the human effort of classifying the phenomena of the empirical world. All that must be postulated is that empirical concepts can be arrived at and that they can be arranged in a system. Rather than the *actuality* of a given order, the weak interpretation merely postulates the *possibility* of such a system, i.e. that the empirical concepts we build to describe the things of the world merely *allow* the establishment of a system of empirical concepts.¹²⁷

126 *ibid.*, p. 279, italics added. See also his contention that every empirical statement “places the object of which it speaks in the comprehensive systematic taxonomy of knowledge.” (p. 276) If Geiger defended merely the weak interpretation, he would have said that empirical statements place the object of which they speak not into “the comprehensive” but merely into “some” systematic taxonomy of knowledge. I thank Dr Alweiss for comments which showed me that I had to make this point more explicit.

127 Thus there is a direct parallel here to Kant’s solution to the cosmological antinomies. The opening lines of section 8 of the Antinomy on *The regulative Principle of pure Reason in its Application to the cosmological Ideas* reads as follows: “Since no maximum of the series of conditions in a sensible world, regarded as a thing in itself, is *given* through the cosmological principle of totality, but can only be *set as a task* that calls for regress in the series of conditions, the principle of pure reason has to be amended in these terms; and it then preserves its validity, not indeed as the *axiom* that we think the totality as actually in the object, but as a *problem* for the understanding, and therefore for the subject, leading it to undertake and to carry on, in accordance with the completeness prescribed by the idea, the regress in the series of conditions of any given conditioned.” (B 536)

We can see clearly from the above-quoted statement that Geiger defends a strong version of the transcendental interpretation and this is indeed incompatible with a merely heuristic reading: one cannot postulate the intrinsic systematicity of nature and at the same time take the idea of the complete system of empirical concepts as merely an ideal that guides our searching. However, it is not equally obvious that the weak version of the transcendental interpretation is incompatible with a merely heuristic interpretation of the principle of reason. As long as all that is postulated is the possibility of the systematization of the concepts we employ to formulate our empirical judgements we do not have to go beyond a merely heuristic interpretation. The postulate of the possibility of systematization can coexist with the assumption that this is only a necessary law for our searching.

The question we now need to ask is how Geiger argues against the heuristic interpretation. He thinks that its advocates are committed to a naturalistic interpretation of the way in which our concepts gain their content. According to Geiger, the proponents of the heuristic interpretation must hold that, in the final analysis, the relationship between a concept and its content is a causal one. Geiger characterizes this interpretation in the following passage:

Thus, all empirical concepts owe their content or meaning, ultimately, to individual impingements of reality on our senses. Indeed, immediate, non-conceptual relations with individual, sensible objects account for the meaningfulness of any of our empirical concepts. Sensing – an event in the realm of physical nature – accounts for the content of empirical concepts. (S. 287)

The next question we must turn to concerns how Geiger motivates his rejection of this view concerning the way concepts acquire meaning. He points out firstly that (1) it contradicts one of the best-known Kantian claims, i.e. that intuitions without concepts are blind. However, the knock-down argument which Geiger thinks shows the untenability of the heuristic interpretation irrefutably is the following: (2) it is a version of the “myth of the given” which overlooks that concepts cannot be applied to intuitions directly but only via rules.

Can one agree with this line of argument? If we agree with Geiger that (a) the application of concepts is possible only by following rules and (b) that a causal explanation of rule-following cannot be given: are we then also obliged to the further assumption that only the idea of the complete system of all empirical concepts can help us out of this aporia? To phrase this question another way: is it impossible to defend the claim that this assumption goes far beyond what is minimally required to explain the application of empirical concepts? Davidson has this to say about our problem: “I am insisting then that one must have a *quite* fully developed set of basic concepts in order to

have any concepts at all."¹²⁸ The all-important question is, of course: *how* fully does the set of concepts have to be developed? It seems to me that Geiger's objections to the heuristic interpretation of the principle of reason lean exclusively on the presupposition that the transcendental interpretation is the only tenable one. He thinks he has refuted the weak version of the transcendental interpretation by having demonstrated indirectly that a theory he takes to be implied by the weak version of the transcendental interpretation is implausible. However, he does not subject the weak version of the transcendental interpretation to a direct and independent assessment of its own merits and thus Geiger overlooks that we can agree with points (a) and (b) outlined above *without* assuming that the systematic order of nature has an intrinsic basis in the objects of nature themselves. Even if the empiricist account of how our concepts acquire their meaning fails to do justice to the complexity of this process, this does not prove that mind-independent nature is thoroughly systematic. However, even if it could be the case that order can be found in nature only as a matter of utterly contingent fact: an appropriate account of concept application might still require more than the empiricist interpretation is willing to consider. The assumption that nature itself is systematic, that all its objects and processes as well as the characteristics of these objects and processes stand in an intrinsically systematic relationship prior to human efforts to understand and explain them is by no means the only alternative to the myth of the given. That all perception and experience is theory-laden does by itself not prove that nature is essentially and thoroughly intelligible. When interpreting the introductions to the Critique of Judgement in the next chapter we will see that, in these texts Kant seriously contemplates the possibility that nature might be partly (or from a certain point onwards) elusive and thus also unintelligible for us.

In my view the main difficulty of Geiger's interpretation lies in the fact that he constantly oscillates between a semantic and an epistemological reading and that he does not differentiate sufficiently between these. Thus towards the end of his defence of the strong interpretation he claims that it is an implication of Kant's argument that "a necessary condition of the meaningfulness of an empirical concept is conceptual relations within a systematic whole of concepts."¹²⁹ He goes on to explain:

This enables us to complete the answer to the question of what is empirical truth: *The assumption of systematic unity is a necessary condition for determining the correspondence of concepts and objects. Concepts refer to objects as part of a system of concepts which together make sense of the world.*¹³⁰

128 Davidson, "The Emergence of Thought", p. 125 (italics added). In: Davidson 2002.

129 Geiger 2003, p. 290.

130 *ibid.*, p. 291 (original with italics).

In order to resolve this ambiguity I would now like to ask whether Geiger is right to claim that Kant thinks the necessity to assume the systematic unity of nature derives from the fact that without it we could not account for the meaning of empirical concepts. We can see that Geiger believes he has to attribute this claim to Kant because he himself thinks that this is the only way in which the strong transcendental interpretation he favours (and in fact thinks is the only one we could adopt) can be defended. However the strong interpretation does indeed seem to imply the semantic assumptions Geiger thinks it has. For, if the objects of nature themselves form a system and individual empirical concepts derive their meaning solely from their position in the system of all concepts then the meaning of individual empirical concepts seems guaranteed: they simply reflect the systematic order the world has prior to their formation and use.¹³¹ What Geiger does not appreciate is that a transcendental interpretation can also be defended in its weak form, and this does not make any semantic assumption of the kind mentioned. The formation of concepts is a far more precarious business in this interpretation because the weak interpretation offers no certainty regarding success in finding empirical concepts.

As I read it, the Appendix to the Dialectic is not at all concerned with questions of meaning but exclusively with those of truth, knowledge and intelligibility. Geiger keeps alternating between these because he does not distinguish clearly enough between two meanings of the word "intelligible": he does not distinguish between the meaning of concepts ("Bedeutung") and the intelligibility of states of affairs, i.e. between making sense of a text and making sense of the world. These two are obviously most intimately related yet they can and therefore must be differentiated. This ambiguity of Geiger's reading is especially obvious in the following claim: "The Appendix therefore completes the theory of empirical meaning and truth of the *Critique of Pure Reason*."¹³² Kant himself has drawn attention to the similarity between logical and semantic or linguistic investigations. At the beginning of § 39 of the Prolegomena he says about this similarity:

To search in our daily cognition for the concepts, which do not rest upon particular experience, and yet occur in all cognition of experience, where they as it were constitute the mere form of connection, presupposes neither greater reflection nor deeper insight, than to detect in a language the rules of the actual use of words generally, and thus to collect elements for a grammar. In fact both researches are very nearly related, even though we are not able to give a reason why each language has just this and no other formal constitution, and still less why an exact number of such formal determinations in general are found in it.¹³³

131 One may well ask whether this view is not as much of a simplification as the empiricist account it challenges.

132 *ibid.*, p. 274.

133 Proleg, A 118.

Yet it seems to me to be questionable to talk about “meaning and truth” in one breath as Geiger does as though the relationship between the two would not require any clarification. In doing so Geiger appears to ignore an ongoing substantial philosophical debate.¹³⁴ In this debate realists assume that we can mean or think more than we can know, whereas anti-realists assume that we cannot think more than we can know. What we can think is restricted in principle by what is knowable.¹³⁵ I think one cannot simply ignore this important debate, for however close the relationship between theories of meaning and those of truth may be,¹³⁶ I think it should not just be assumed that they have the same subject matter. Central to Geiger’s article is his concern with the meaning of concepts. For Kant, however, as I understand him, the central questions of the Appendix pertain to a fundamental condition of the possibility of empirical knowledge. In order to be able to refer to something specific the concepts employed in empirical statements must have meaning and their position in a system of other empirical concepts clearly *contributes* to them having the meaning they do. But that in itself does not guarantee the truth of the judgements in which they occur. Even the most elaborate system of empirical concepts could be a merely heuristic fiction. How it is conceivable that it is not just a fiction but instead grasps the truth about the world is, in my view, the central problem of the Appendix to the Transcendental Dialectic.

By reading the difference between the weak and the strong version of the interpretation of the principle of reason chiefly in semantic terms, i.e. as concerning the different views about the way in which words gain their meaning, in my view, Geiger overlooks the more fundamental epistemological issue, with which I think the Appendix of the Dialectic is chiefly concerned. This explains his motivation for adopting the strong interpretation and the lack of an independent assessment of the strength and tenability of the weak interpretation. Thus he excludes the weak interpretation too early from his inquiry and does not see that it is compatible with a merely heuristic interpretation of the substantive issue regarding the systematicity of nature.

134 Towards the end of his article “Truth and Meaning” Davidson makes the following remarks about this debate: “Since I think there is no alternative, I have taken an optimistic and programmatic view of the possibilities for a formal characterization of a truth predicate for natural language. But it must be allowed that a staggering list of difficulties and conundrums remains.” In: *Inquiries into Truth and Interpretation*, p. 35.

135 See also Williamson: “In the abstract, anti-realists can claim to be modest about what they can think (which is harshly constrained by what they can know), just as realists can claim to be modest about what they can know (which falls far short of what they can think).” “Anthropocentrism and Truth”, p. 51. *Philosophia*, 1987, Vol 17, No. 1.

136 See: “But can one reflect on concepts without reflecting on reality itself? For the aboutness of thought and talk is their very point.” Williamson. 2008. *The Philosophy of Philosophy*, p. 20.

5. Summary of the main findings

My final task in this chapter shall be to summarize its main findings. I would now like to turn to it by reviewing the material presented and analysed in the previous sections and by augmenting it where it would appear indicated in order to further develop and articulate my central argument. I will look at (1) the relationship between reason and understanding and then address the question as to (2) why there could not be a category-free experience. I shall conclude with (3) reflections on the more general question of how objectivity and intelligibility are related to each other.

5.1. The essential interdependence of Reason and Understanding

In this chapter we have seen that without reason and some degree of order among the objects of experience we could have no understanding, i.e. that the understanding is subject to a double dependency: i.e. on empirical order, on the one hand, and on reason, on the other. If reason has no other object than the understanding and the potentially disparate knowledge provided by the understanding, does this not imply that without the order of nature we would have no reason either? A confirmation of this conclusion can be found in the Doctrine of Method where we find the following passage:

What *use* can we make of our understanding, even in respect of experience, if we do not propose ends to ourselves? But the highest ends are those of morality, and these we can know only as they are given us by pure reason. But though provided with these, and employing them as a clue, we cannot make use of the knowledge of nature in any serviceable manner in the building up of knowledge, unless nature has itself shown unity of design. For without this unity we should ourselves have no reason, inasmuch as there would be no school for reason, and no fertilisation through objects such as might afford materials for the necessary concepts.¹³⁷

Thus what Kant says about the principle of causality, that it has “the peculiar character that it makes possible the very experience which is its own ground of proof”,¹³⁸ applies in a similar way also to the principle of purposiveness: although it is merely an idea of reason, we cannot think that it is no more than that. We would not have reason, to which we owe the idea of purposiveness, if it were not realized in the empirical world, at least to *some* extent. So we only have reason because nature itself displays the purposive-

¹³⁷ CopR, B 845.

¹³⁸ *ibid.*, B 765. On this point see also Peter Baumanns: “The unity of nature purposive for knowledge is only the first, superficial view. From the higher, practical perspective it become clear, that this purposiveness of nature for our knowledge is itself purposive. It appears to be purposive for building the idea of the “highest good”: the “Realm of Grace” presupposes a nature which on the whole is both real and conforming to reason. We cannot conceive the unity of the moral world under a moral author of the world without a nature that this logically constituted.” p. 23.

ness for our understanding that the principle of reason demands. In other words: we have reason only because the nature we are part of is itself amenable to reason's goal of systematicity. We clearly need to assume both: i.e. the objects are as objects of experience dependent on the understanding and reason, yet these are dependent on the order intrinsic to these objects. This, again, is evidence for an interdependence of the kind found for the relationship between empirical laws and the principle of causality.

All epistemology (and metaphysics, of course, also) is ultimately concerned with the relationship between thought and reality, between theories and things. In Plato's metaphysics this problem is solved by the assumption that what guarantees the intelligibility of things, their forms, is identical with that which makes them what they essentially are.¹³⁹ In this way it is conceivable that in our understanding we have access to the essence of things, to what they really are, not just to what they appear as to us. In his pre-critical inaugural dissertation¹⁴⁰ Kant still stands in the tradition of this metaphysics when he writes in § 4 that sensitive cognitions represent things as they appear, intellectual cognitions, however, represent things as they are (we can add: in themselves).¹⁴¹ Yet two years later, in the famous letter to his former student Markus Herz, he writes that in this dissertation he had passed over in silence the question as to the ground on which the relationship between that which we call our representation and the object distinct from it rests. The Critique of Pure Reason is Kant's attempt to provide the answer to this question. However, as will be seen in the next chapter, all that is established in the First Critique is a relationship between the most general concepts, the categories and an "object in general".¹⁴² No deduction can be given for the objective reference of empirical concepts. In the Third Critique Kant will say that all empirical concepts can do is make a claim to objectivity.¹⁴³

At the beginning of his article Geiger claims that the necessary condition of empirical knowledge elaborated in the Appendix "is independent of the other necessary

139 Compare Politis: "That which explains why a particular thing has a certain quality, *f*, and that which determines which quality this is and constitutes the identity of this quality, *are one and the same thing*." In: "Explanation and essence in Plato's Phaedo"; forthcoming in: David Charles, *Definition in Greek Philosophy*.

140 *De mundi sensibilis atque intelligibilis forma et principiis* (1770).

141 *ibid.*, A 4: "...sensitive cogitata esse rerum representationes uti apparent, intellectualiter autem, sicuti sunt..." For a comprehensive and more recent discussion of the relationship between Kant's inaugural dissertation and the First Critique see Politis 1997.

142 See CopR, B 128: "But first I shall introduce a word of explanation in regard to the categories. They are concepts of an object in general, by means of which the intuition of an object is regarded as determined in respect of one of the logical functions of judgment."

143 See CoJ, B XLVI: "But the judgement of taste also *claims, as every other empirical judgement does, to be valid for every one; and in spite of its inner contingency this is always possible.*" (*original without italics*).

conditions of experience."¹⁴⁴ I do not think that one could say that the idea of the complete system of all empirical concepts is independent of all the other conditions of experience. On the contrary, I think that, in the Appendix, Kant wants to demonstrate that the opposite of Geiger's claim must be assumed: i.e. that the formal conditions for the possibility of empirical knowledge essentially depend on the material and contingent transcendental conditions. These material conditions are a necessary complement of the formal conditions. In the introduction to a collection of articles on Kant's epistemology edited by him, Walker points out that Kant could not bring himself to acknowledge that the fact that we have knowledge could depend entirely on conditions "which merely happen to hold."¹⁴⁵ Kant certainly denies that it could be the case that all the conditions for the possibility of knowledge could be contingent. However, as has been seen in the discussions of this chapter, Kant is fully aware that contingent facts have an ineliminable role to play in the realisation of the mere possibility of empirical knowledge, a possibility furnished by the non-contingent transcendental conditions, i.e. the a priori forms of intuition and thought. What we cannot admit in the search for the laws of thought, i.e. an element of "luck", is essentially involved in the search for the system of empirical concepts. Knowledge, however, is never a matter of pure luck. In the sciences we try to eliminate or at least minimize this contingent element by following strict methods and procedures, but even then the gaining of knowledge is often nevertheless also a matter of luck as the history of science amply testifies. To mention just one better-known example: Röntgen "accidentally" discovered x-rays when experimenting with vacuum tubes.

5.2. Why there could not be a category-free experience

One question that could arise at this point is the following: are the categories not dispensable if the objects of experience have an intrinsic order of their own and if the function of the understanding is not to order but merely to apprehend the manifold of experience? Kant described the thought experiment of a category-free experience in a letter to Markus Herz. As it is a very instructive text that directly addresses the question just raised I would like to quote it in full. The texts in angle brackets insert words missing in the original and comments that provide the context:

If we could prove that knowledge of things ... of experience is possible only subject to those conditions [of a pure intuition and pure concepts of the understanding], not only

¹⁴⁴ See, however, also his more careful formulation: "According to the transcendental reading the Appendix adds a necessary condition of knowledge to the matrices of space and time and the categories. But, significantly, the argument *seems* not to depend on these conditions." (Geiger 2003, p. 297) (italics added).

¹⁴⁵ Walker 1982, p. 3.

would all other concepts [of] things (which are not subject to those conditions) be empty for us and could not serve for any insight, all [representations] of the senses for a possible experience would *without them* likewise not only never refer to objects, they would not even serve towards that unity of consciousness which is required for knowledge of my self (as an object of inner [sense]). I would not even know [whether] I have them, and therefore they would be nothing for me as a cognizing being, notwithstanding which they would as representations still be (if I make myself in thought to an [object]) connected according to an empirical law of association and thus also [influence my] feeling and will, and in me ... (provided I was aware of each individual representation [only], not of their relation to the unity of the concept [of the] object via the synthetic unity of their apperception) carry on their regular play, without me coming to know through this [regular play] *anything*, not even my own [inner] state.¹⁴⁶

In this passage Kant maintains that it is imaginable that our representations could be subject to regularities of association without us gaining knowledge in this way, i.e. without categories of the pure understanding we could still have in inner life of representations governed exclusively by empirical laws of association. These rules are clearly not injected by the understanding (which Kant at A 127 defines as the “capacity for rules”). This regularity belongs to the representations themselves.¹⁴⁷ Yet, according to Kant, this regularity does not constitute a relation to an object by itself. For him, the concept of an object originates exclusively in the pure understanding. Without it and its categories we could not have experience of an objective world.¹⁴⁸ According to a note to § 39 of the Prolegomena the category of substance lies at the basis of all our concepts of individual objects. In order to experience the objective world we thus need both empirical concepts (which are possible because we observe regularities) and pure concepts or categories. Empirical and pure concepts are indispensable complements of each other.

In a note to § 16 of the B deduction, where he considers the relationship between the analytic and the synthetic unity of the apperception, Kant explains how the formation of the most basic empirical concepts is possible only if the world of experience is made subject to the unity of the understanding. He gives the following example: if one thinks of the predicate “red” one imagines a feature that is encountered as the characteristic of one object which could, however, be instantiated in other objects and thus combined with different characteristics. Thus the analytic unity, i.e. the unity of the

146 Letter to Markus Herz from 26 May 1789 (italics added).

147 I take this point to be identical to what Kant says at the end of § 25 of the B deduction where he explains: “I exist as an intelligence which is conscious solely of its power of combination; but in respect of the manifold which it has to combine I am subjected to a limiting condition (entitled inner sense), namely, that this combination can be made intuitable only according to relations of time, *which lie entirely outside the concepts of understanding*, strictly regarded.” (italics added).

148 See the following passage from Kant’s letter to Herz: “The theory of Mr. Maymon is basically: the claim that the understanding is a capacity to intuit, where thought is nothing but a way of bringing the manifold of intuition ... to a clearer consciousness, whereas I attribute the *concept* of an object in general ... to the understanding, as a special capacity....” (26 May 1789).

empirical concepts which result from the reflection on the different objects of experience, is possible only because of the a priori synthetic transcendental unity of the apperception:

A representation which is to be thought as common to different representations is regarded as belonging to such as have, in addition to it, also something different. Consequently it must previously be thought in synthetic unity with other (though, it may be, only possible) representations, before I can think in it the analytic unity of consciousness, which makes it a *conceptus communis*.¹⁴⁹

Without the framework of experience provided by the a priori synthetic transcendental unity of the apperception and the pure concepts and the principles spun from it, which enable the unity of the manifold of representations in *one* consciousness, we could not build empirical concepts because it requires this framework of the one world of experience as its necessary “background”, as it were.

5.3. Objectivity depends on intelligibility

More generally, it is of crucial importance to be clear about one thing: this postulate of the intelligibility of reality is not on the same level as the individual hypotheses in the sciences. The postulate of the intelligibility of reality is more radical and reaches deeper than a scientific hypothesis. Objectivity would not make any sense without intelligibility. If one is convinced of the ultimate elusiveness of reality and still engages in theoretical physics, for example, one commits a performative self-contradiction.¹⁵⁰ The assumption of the intelligibility of the world, or of this postulate of theoretical reason, as one might also call it, is, however, by no means identical to the conviction that reality is “knowable through and through”, as Geiger thinks.¹⁵¹ That the intelligibility of the world is a necessary presupposition of all objective inquiry entails nothing about the possible reach of this inquiry. *Our* world ends where our understanding of the world ends, not *the* world. The latter would be an objective idealism which Kant was opposed to. He accepted unknowable truth. Otherwise it would seem impossible to make sense of his oft-quoted dictum that he had to deny knowledge in order to make room for faith (B XXX). The question concerning the intelligibility of reality, however, is not one that belongs to the

149 B 134. It continues: “The synthetic unity of apperception is therefore that highest point, to which we must ascribe all employment of the understanding, even the whole of logic, and conformably therewith, transcendental philosophy. Indeed this faculty of apperception is the understanding itself.”

150 This does not, of course, mean that physics can be done in this spirit. Niels Bohr was an example of such a scientist. He did not regard the world as “an objective reality with a given structure (let alone “design”) conceptually separable from us as observers. Instead the world is simply there, with us in it as an integral part. Thus, there must be limits to the depth of our understanding that we can hope to gain of the world, both because of our joint role as spectators and actors in the drama of existence and because that drama, lacking an author, has no plot.” Jammer 1999, p. 234.

151 See Geiger, p. 298.

philosophy of science but to metaphysics. Towards the end of his introduction to quantum theory Polkinghorne concludes that the solution of the problems surrounding the interpretation of quantum mechanics cannot be achieved without making metaphysical commitments.¹⁵² An exceptionally clear formulation of this thought, which reads like his philosophical testament, is the last sentence of Nagel's *The Last Word*:

Reason is whatever we find we must *use* to understand anything, including itself. And if we try to understand it merely as a natural (biological or psychological) phenomenon, the result will be an account incompatible with our use of it and with the understanding of it we have in using it. For I cannot *trust* a natural process unless I can see why it is reliable, anymore than I can trust a mechanical algorithm unless I can see why it is reliable. And to see that I must rely on reason itself. Even if we distance ourselves from some of our thoughts and impulses, and regard them from outside, the process of trying to place ourselves in the world leads eventually to thoughts that we cannot think of as merely "ours". If we think at all, we must think of ourselves individually and collectively, as submitting to the order of reasons rather than creating it.¹⁵³

We do not know whether the thoughts with which we try to orient ourselves in the world are more than *our* thoughts. Yet, as Nagel says, we cannot regard them as no more than that. I think that with this claim Nagel is closer to Kant than he realizes. For the fact that we cannot regard the thoughts with which we place ourselves in the world as merely ours is equivalent to the claim that they are more than our thoughts. And what is to be assumed about thoughts must necessarily also be assumed about the concepts with which we formulate these thoughts. Moreover, they have to be empirical and not a priori concepts if they are to constitute thoughts that locate us in the *world*. Of these concepts we must therefore postulate that they "cut the world at its joints". To think this, Kant has recourse to the "as-if" assumption of a wise author of the world,¹⁵⁴ with its corollary that the world has "originated from an idea".¹⁵⁵

152 In view of this statement of a scientist, it is not without irony that many philosophers try to make their subject more acceptable by emulating the methods of natural science or by insisting that philosophy is no different from and on a par with the inquiries conducted in the sciences. Polkinghorne's view is shared by Michael Dummett who says: "The correct interpretation of quantum mechanics is, after all, a philosophical problem." *Begriffanalysen ohne Definitions-hohheit*, p. 30. In: Joachim Schulte (Hrsg.): *Was ist ein philosophisches Problem?*

153 Nagel 1997, p. 143.

154 Kant's position on the teleological proof of God's existence (B 651ff), which he thinks "always deserves to be mentioned with respect" is complex. On the one hand the order, purposiveness and beauty of the world would lead to the irresistible conviction that the world has a divine origin. Yet on the other hand this ever-increasing evidence is, though powerful, only empirical, and its claim to apodictic certainty cannot be accepted. The proof cannot, therefore, demand our unconditional submission. For it only leads to the idea of an architect of the world, not to a creator. However, Kant ultimately sees the fact that God's existence cannot be proofed as purposive for the purity of the moral life. For otherwise it could be motivated by fear rather than a sense of duty. Thus he says in the Second Critique "that the unsearchable wisdom by which we exist is not less worthy of admiration in what it has denied than in what it has granted." (A 266).

155 See CopR, B 844. Nagel says of the idea that reality is essentially intelligible, that it makes us "more at home in the universe than is secularly comfortable." (Nagel 1997, p. 130).

6. Concluding remarks

In the Critique of Pure Reason Kant is concerned with the problem of how a priori synthetic judgements are possible. In the analysis of judgements of experience, however, we have to answer the question how a posteriori synthetic judgements are possible. According to Kant, they become possible when the understanding and sensibility “materialize” their pure forms with the empirical content of concrete experience and thus provide the “super-sensible substrate (within as well as without us) with determinability”.¹⁵⁶ If the possibility of experience established by the pure understanding is to be realized, an additional assumption has to be fulfilled. The possibility of empirical knowledge depends on the systematicity of the world. However, it is not provable a priori that such systematicity is in fact to be found, thus it always remains possible that the understanding fails to gain insight into the empirical world. Aspects of it or objects in it may elude us in part or totally, as is, for example, imaginable at the subatomic level. The a posteriori elements of empirical knowledge depend on formal transcendental conditions which pertain to “the form of an experience in general” (A 125). Yet the “transcendental content” (B 105) would be inapplicable without an empirical complement. The understanding merely provides the empirical content with determinability. For this potential of a determination to become actualized the merely necessary conditions provided by the principles of the understanding have to be complemented by additional transcendental conditions, on which the understanding has no influence. At the beginning of this chapter I quoted Polkinghorne’s statement that it is “intelligibility rather than objectivity which is the clue to reality.” We can see now that only if and to the contingent extent that we succeed in finding regularities in the appearances and thus manage to build empirical concepts without which we could not formulate empirical laws, can we regard the phenomenal world as objective and distinct from our representations of it. We ascribe the order of our experience to its objects, yet Kant saw that the opposite dependency also applies, that it “is ...order ...that determines an object”,¹⁵⁷ as he makes clear in the proof of the Second Analogy. Objectivity becomes unhinged where order ends. Objectivity requires intelligibility and is not established by the understanding alone.

156 CoJ, B LVII.

157 CopR, B 246.

We saw Strawson¹⁵⁸ overlook this aspect of Kant's theory of objectivity. In the previous chapter we saw that he denies that Kant's proof of the Second Analogy is successful and then makes an attempt to replace it with a reconstruction that lies in a Kantian direction.¹⁵⁹ He wants to see Kant's Analogies of experience, these "three scientific super-principles",¹⁶⁰ replaced by a "loosely-woven mesh of our concepts of the objective".¹⁶¹ In his view, Kant's principles are statements which formulate conditions which are much too strict for the possibility of experience. With regard to the principle of causality as a "strictly sufficient condition(s) for every objective change" one would have to deny that this is a necessary principle for it would suffice to see it as an expression of "natural hopes".¹⁶² What would suffice instead of strict universality Strawson states as follows: "Objects may change; but they must not, so to speak, change out of all recognition. If they did, we could not know they had: for we could not recognize *them* as having changed."¹⁶³ Yet his proposal of a reconstruction and replacement for Kant's Second Analogy overlooks that changes "out of all recognition" are exactly what the principle of reason postulates as inadmissible!

Thus what can we secure as the contribution of the second chapter to the articulation and defence of the No-Priority-thesis? I think it is the following: the argument of this chapter has shown that not only can there be no empirical knowledge unless the world of experience is structured by pure concepts of the understanding, but that the opposite dependency has to be emphasized also *and to the same extent*. There can be no constitution of the framework of experience without the simultaneous structuring of the content of this experience¹⁶⁴ in and by empirical concepts, which is equivalent to the core claim of this dissertation that the formal conditions for the possibility of knowledge depend on their material counterpart essentially.

158 Bennett shares Strawson's view. "Strict universality is desirable, but only as the limit of something which we want in as high a degree as possible" (p. 162). For just because of "occasional flurries of disorder" (p. 219) the world of experience does not become indistinguishable from a world of phantasy. According to him it was Kant's rigorist cast of mind which prevented him from considering a weakly-quantified science in which hypotheses of the form "For all but a very small number of values of X ..." (p. 162f) might be acceptable.

159 Strawson 1976, p. 140.

160 *ibid.*, S. 147.

161 *ibid.*, p. 146.

162 *ibid.*

163 *ibid.*, p. 144. Italics in the original.

164 For further discussions on these claims see Baumanns 1997, p. 186ff and Simon 1976, p. 373ff.

Chapter 3

Systematicity in the Third Critique

Nature uses only the longest threads to weave her patterns, so that each small piece of her fabric reveals the organization of the entire tapestry.

Richard Feynman¹

We should expect any activity which has as its goal the establishment of truth to be systematic.

Michael Dummett²

There can be nothing more desirable to a philosopher, than to be able to derive the scattered multiplicity of the concepts or the principles, which had occurred to him in *concrete* use, from a principle *a priori*, and to unite *everything* in this way in *one* cognition. He formerly only *believed* that those things, which remained after a certain abstraction, and seemed by comparison among one another to constitute a particular kind of cognitions, were completely collected; but this was only an *Aggregate*. Now he *knows*, that just so many, neither more nor less, can constitute the mode of cognition, and perceives the necessity of his division, which constitutes comprehension; and now only he has attained a *System*.

Immanuel Kant³

1. Introduction

The previous chapter examined Kant's arguments for the existence of material conditions for the possibility of empirical knowledge as he develops them for the first time systematically in the Appendix to the Transcendental Dialectic. Against this background I would now like to look at the way in which Kant develops these same ideas further in the Critique of Judgement. This chapter is meant to contribute to the defence and articulation of the No-Priority-thesis by arguing for a particular interpretation of Kant's Principle of Judgement. This principle claims that we must regard the objects and events of the empirical world as though they have a structure that is accessible to our limited powers of comprehension. Analogous to the argument developed in chapter one on the Second Analogy, this chapter will seek to show that an alternative interpretation, which I shall defend against the rival interpretations that have dominated the debate, can accommodate Kant's apparently contradictory commitments better than these interpretations. The so-called methodological or heuristic and objectivist transcendental or metaphysical interpretations must each discount or play down those passages of Kant's text which contradict the reading they advocate, and thus deny the merit of the respective other side. This is difficult to do: Kant argues for both the heuristic and a more than heuristic

1 Feynman 1992, p. 34.

2 Michael Dummett: "Can Analytic Philosophy be Systematic and Ought it to Be?", p. 456. In: Dummett 1978.

3 Opening lines of § 39 of the *Prolegomena* (italics added).

aspect of the Principle of Judgement with equal force. By contrast, the interpretation defended in this chapter allocates genuine insight to *both* these rival interpretations. However, it denies that they must be seen as irreconcilable.

The argument of this chapter is structured in the following way. Following (1) these introductory remarks the next section will state (2) three rival interpretations of the Principle of Judgement and discuss the relationships between them. Section (3) will then give an exposition of this principle and analyse the two deductions which Kant provides for it in the Critique of Judgement. In order to situate Kant's arguments for the Principle of Judgement in the wider context of his overall theory of knowledge, section 3 will address two questions these deductions give rise to in separate subsections. Section 4 turns to the consideration of other commentators. In this section I shall examine the interpretations advanced by Allison, Abela and Kitcher and defend my interpretation against the readings suggested by these critics. I will then assess Guyer's claim that there is a radical shift in Kant's epistemological views between the First and the Third Critique. Section 5 will briefly review the argument of this chapter and secure its result.

Terminological clarification: for the sake of conceptual clarity in what is to follow I shall first address a terminological point. The clarification I think is needed concerns the relationship between the requirements of concept formation and the assumption of the systematicity of nature or the question as to what, according to Kant, is to be understood or implied by the intelligibility of nature or what the claim of possessing empirical knowledge amounts to.

For Kant, all knowledge – logical, transcendental and empirical knowledge – must be systematic. The logical forms of judgement, the categories and the principles of the understanding as well as the ideas of Reason each occupy a place in a table or system of such forms of judgements, categories, principles or ideas. Moreover, in Kant, there would appear to be no sharp demarcation of the point where general knowledge ends and scientific knowledge begins. Instead, it appears that there is a gradual transition from one to the other, because even our so-called “common knowledge” would appear to depend on the systematicity of nature. For, although it is, of course, much easier to identify a duck on a pond, which a child can do, than to recognize a particular sub-atomic particle by the trace it leaves in a cloud chamber, in both cases the identifiability of the object in question depends on the systematicity of nature, and this systematicity appears to be at the very foundations of what we take to be our empirical knowledge, about which we are typically not concerned or to which we are oblivious in our everyday experience.

A related question that needs to be addressed in this regard is whether for Kant there can be knowledge that is not explanatory. It seems to me that we have to answer

this question in the affirmative. For example, Kant thought that he had established as an indubitable fact *that* space and time are forms of intuition of finite intellects. Yet he also maintained that we cannot explain *how* this is possible. It is a gap in our knowledge that we shall never be able to fill.⁴ For this reason he describes his arguments in the *Transcendental Aesthetics* as a metaphysical and transcendental exposition (*Erörterung*) of the concepts of space and time rather than an explanation (*Erklärung*).⁵ Not only is a lot of our general knowledge merely descriptive and thus deficient in this way, a lot of scientific knowledge is deficient in the same way. For example, we know *that* specific mutations of certain genes increase the likelihood of developing certain types of cancer, but we cannot explain *why* this is so.

Yet, where our ability to explain natural phenomena ends we can still describe them, and when these descriptions are systematic we can hope that explanation may replace mere exposition and description at some future date.⁶ Thus we can distinguish in Kant's epistemology between fully explanatory and merely descriptive knowledge. The latter, although deficient, nevertheless qualifies as knowledge. We know far more than we can explain. Once I have learned the adjectives denoting colour I can come to know that grass is green or that gold is yellow by simple perceptual takings without – unlike the physicist, who has at his or her disposal the necessary background knowledge – being able to explain *why* this is so. Thus if I refer to the intelligibility of the phenomenal world in what follows, I merely imply that an aspect of empirical reality is amenable to systematic description. Explainability is a further and desirable, yet not necessary condition for a statement to qualify as knowledge. It seems to me that as long as a systematic description of phenomena is possible, Kant would regard this as constituting empirical knowledge. If such knowledge stands in an explanatory relation with other knowledge, all the better. Its status as knowledge is strengthened by such further systematic integration.⁷

4 See A 393: "The ... question ... then simply comes to this: *how in a thinking subject outer intuition*, namely, that of space, with its filling in of shape and motion, *is possible*. And this is a question which no man can possibly answer. This gap in our knowledge can never be filled;..." (italics in the original).

5 In the *Critique of Judgement* he carefully distinguishes between these two: "Now of this [the supersensible, MW] we can have no concept but the indeterminate concept of a ground, which makes the judging of nature by empirical laws possible, but which we cannot determine more nearly by any predicate. Hence the union of both principles cannot rest upon a ground of explanation of the possibility of a product according to given laws, for the determinant Judgement, but only upon a ground of its exposition for the reflective Judgement." (B 358).

6 A hope – as we will see later in this chapter – Kant held out for the science of biology and which was arguably fulfilled by Darwin's theory of evolution along the lines Kant said this hope might be fulfilled.

7 For example, the formula for the visible spectral lines of the hydrogen atom discovered by Balmer was such a merely descriptive item of knowledge until it could be deduced from Schrödinger's quantum mechanical wave equation. See Polkinghorne 2002, p. 20.

Anticipation of the result: to end this introduction, I wish to briefly anticipate the result of this chapter. I shall argue that the transcendental principle of systematicity should be given an interpretation as weak as the one I advocated for the transcendental principle of causality. Neither principle tells us what the world must be like. Neither can rule out that we may experience things and events that defy our ability to comprehend them and offer explanations for them. It seems to me that the weakness of both principles is a most powerful indicator of the strength of Kant's commitment to a robust empirical realism. We cannot prove that nature is thoroughly systematic in all possible fields of objects and events and, because of this, we come to realize that our capacity to understand the phenomenal world ends at the point where the principle of systematicity ceases to be applicable. According to Kant we have direct access to individual objects in intuition. Thought, however, is restricted to the universal features of empirical reality. Therefore, in strict parallel to the Second Analogy discussed in chapter one, the Principle of Judgement is, on the one hand, a formal a priori principle of empirical knowledge governing the formation and application of empirical concepts. Yet, on the other hand, it must also be recognized as a material transcendental condition, for only to the contingent extent that the empirical world displays a systematic order can we objectify and understand it. Objectivity becomes unhinged where intelligibility ends. Having made these preliminary remarks, I shall now turn my attention to the characterization of three rival interpretations of the Principle of Judgement.

2. Three rival interpretations of the Principle of Judgement

This section serves to prepare the arguments of the sections to follow by providing a characterization of three rival interpretations of the Principle of Judgement. I shall begin by giving a definitive wording to these three interpretations and then discuss the ways in which they are related to each other. The interpretations of the Principle of Judgement that have dominated the debate can be grouped into two main types:

1. a strong objectivist or metaphysical interpretation,
2. a weak heuristic or methodological interpretation.

They can be characterized in the following way: the objectivist, transcendental or metaphysical interpretation assumes that Kant wishes to prove the following:

Systematicity is a mind-independent feature of the empirical world and this can be established prior to our efforts to understand the empirical world and to find explanations for its phenomena. There is but one true system of all concepts describing the objects and events of the empirical world and in this system every empirical concept has its place.

As we saw in the previous chapter, a weaker version of this interpretation would merely claim that all things of the world are at least systematizable in empirical concepts, and that it is possible to find a system of empirical concepts, in which every concept could find, if not *its* place, at least *a* place. The heuristic or methodological interpretation challenges this reading. It maintains that Kant's claims do not amount to more than the following:

Systematicity is merely an indispensable heuristic or methodological principle needed to guide our scientific searching and to ease the burden of our memories. The belief that it has an objective equivalent in the structure of the empirical world is an illusion.

According to this reading we do not find systematicity in the empirical world, but we impose it onto the empirical world or infuse the empirical world with it. The alternative reading, which I shall defend in this chapter against the heuristic and the objectivist readings, is formulated in parallel to the interpretation of the Second Analogy, for which I argued in chapter one. I have called it the *compatibilist* interpretation. It can be stated in the following way:

It is possible to gain empirical knowledge of and to find scientific explanations for the objects and events of the empirical world only if, and to the contingent extent that, the empirical world has a mind-independent systematic structure of its own.

The relationship between these three interpretations of the principle of judgement requires some clarification. I shall now briefly discuss the ways in which they are related to one another.

2.1. The relationships between the three Interpretations

The heuristic interpretation is implied by the objectivist interpretation because, if systematicity is an intrinsic feature of the empirical world, then the assumption of such an intrinsic order will reliably guide us to the discovery of those aspects of the empirical world which we have not yet discovered. While it agrees with the weaker interpretation of the principle of systematicity about the heuristic status of the principle, the compatibilist interpretation nevertheless maintains that the supposition of systematicity must be assumed to be more than just a methodological principle. The compatibilist interpretation claims that systematicity is also a material transcendental condition and that it must, therefore, have a degree of objective manifestation, if knowledge is to be possible. It insists that the principle of systematicity cannot be severed from some degree

of material manifestation. While more than heuristic, according to the view defended in this chapter, the principle is less than a general principle governing all of the empirical world, or rather: it is not provable a priori that the empirical world has a thoroughly systematic order in all its aspects. Kant's position is thus more humble than the metaphysical, yet, at the same time, more objective than the merely heuristic interpretation.

If the reading of the Principle of Judgement defended in this chapter is tenable, it follows that we cannot assume that systematicity is an intrinsic feature of all of empirical reality. From this it follows, further, that we cannot know whether our scientific endeavour is in fact rational in a given case. While we can know the general conditions for the rationality of science we cannot know whether these conditions obtain de facto in a given case prior to our efforts to find explanations for given phenomena. And this, it seems to me, points strongly to the robust empirical realism of Kant's theory of knowledge, for it allows that aspects of empirical reality could turn out to be elusive and resistant to our best efforts to find theories that describe them. That we will, in fact, find laws when confronted with a hitherto unknown field of objects and events, for example that, in physics, we find laws which govern the behaviour of matter beyond energy levels currently realizable, is by no means certain. We cannot even answer with certainty whether success in our goal of rational comprehension is *possible*. However, that does not make the effort to achieve an understanding of new phenomena irrational, because we cannot not know either that failure is certain. After the exposition and discussion of the three rival interpretation of the Principle of Judgement let us now turn to the analysis of Kant's own texts.

3. Kant's deductions of the Principle of Judgement

In this section I shall closely examine two texts that are of central importance to the argument of this chapter. Kant provides two separate deductions for the Principle of Judgement. I would like to interpret each of them in two stages: first, by way of a close reading of these texts themselves, i.e. by considering Kant's claims and arguments in detail, and second by addressing a question the arguments examined give rise to. My primary concern in the first part of this section is to defend and articulate the compatibilist interpretation through a concise exposition of the central sections IV to VI of the Second Introduction to the Critique of Judgement in which Kant deduces or justifies the Principle of Judgement. Predictably, I will pay particular attention to those aspects of Kant's argument which I think support the compatibilist interpretation. The level of detail of this exposition is determined by my secondary aim of providing a solid textual

basis, to which I can refer back during the critical assessment of some rival interpretations in section 3.4. After I have examined Kant's claims and arguments in the Second Introduction to the Third Critique, I shall look at § 76 and § 77 of the Critique of Teleological Judgement, in which Kant presents a thought experiment concerning an intuitive understanding. I have chosen to examine these sections for two reasons: in order (1) to broaden the textual basis of my overall interpretation and (2) to deepen the analysis of Kant's arguments for this principle. These two paragraphs offer in some way the more fundamental argument for the Principle of Judgement. I think that a thorough exposition and analysis of Kant's views on systematicity cannot afford to ignore these instructive and important texts. After the interpretation of these central texts, I will address a question that they give rise to. Kant's exposition of the idea of an intuitive understanding strongly invites comparison with the idea of God as he develops it in chapter three of the Transcendental Dialectic of the First Critique on the Ideal of Pure Reason. This comparison will serve to clarify and contextualize the thought experiment concerning an intuitive understanding and to highlight important additional aspects of Kant's complex views on systematicity, especially as these relate to the way in which they are connected to the issue of purposiveness or teleology. Moreover, this subsection will serve to show the unity and continuity of Kant's thinking on systematicity from the First to the Third Critique. I shall now turn to Kant's arguments for the Principle of Judgement as he develops them in the Second Introduction to the Third Critique.

3.1. Sections IV to VI of the Second Introduction to the Third Critique

Even admirers of Kant will have to admit that these texts are not among his most rigorous.⁸ Quite the opposite in fact: in these texts Kant makes repeated efforts to formulate essentially the same idea. If it is a principle of good philosophical writing to say things once and say them well, it must be admitted that in the texts now to be examined, Kant tries only to observe the latter part of this maxim.⁹ The sections preceding section IV are not so much of interest from a systematic point of view, but more from an historical one. They mainly concern the inner architectonic of Kant's system of philosophy. Section IV introduces the general problem of the intelligibility of the empirical manifold of nature. Section V, the central section of the Second Introduction

8 Schopenhauer's criticism that the Critique of Judgement is evidence of Kant's "strange talent to mull over one thought until a book has become of it" is not unfounded when applied to the introduction. (Schopenhauer 1890; vol I, p. 630).

9 He had discarded an earlier version of the introduction for the reason that it was too long. It was eventually published in 1923 as part of the *Akademieausgabe*.

to the Third Critique, gives a deduction of the Principle of Judgement and section VI is, in some ways, no more than a corollary to the previous two, but nevertheless makes some important points that need to be considered.

3.1.1. Section IV: on judgement as an a priori legislating faculty

Kant begins his discussion with a definition of judgement: "Judgement in general is the faculty of thinking the particular as contained under the universal." It can either be determinant or reflective. It is determinant (i) if the universal is given, and reflective (ii) if only the particular is given and the universal has yet to be found. A case of determinant judgement is judgement in its transcendental form. Kant developed its "doctrine" in chapters one and two of the *Analytic of Principles*, i.e. on the *Schematism of the Pure Concepts* and on the *System of all Principles of the Understanding* in the First Critique. In this case both the universal, the categories, as well as the particular, i.e. the homogenous pure manifold contained in the intuition of time, are given a priori. The problem of a mediation between intuition and concepts, which otherwise requires judgement as a special "talent" (B 172), is supposed to be solved in this instance because the case that is to be subsumed under the universal concepts is given a priori. It can be "anticipated" (B 256): "Transcendental philosophy has the peculiarity that besides the rule (or rather the universal condition of rules), which is given in the pure concept of understanding, it can also specify a priori the instance to which the rule is to be applied."¹⁰

Kant says that the empirical manifold of nature is left undetermined by the transcendental laws of nature, because these relate only to "nature in general". However, there must also be laws governing nature in her empirical details and, from the point of view of our understanding, these are contingent laws. If we want to call these empirical laws laws of nature we have to regard them as necessary, for this is required by the concept of nature. The principle of unity of these various different empirical laws of nature, however, is unknown to us. Kant then crucially contends that, in order to "ascend from the particular in nature to the universal" (B XXVII), reflective judgement, which has the task of finding empirical concepts for the particular objects in nature,

¹⁰ CopR, B 174. That the pure understanding requires a pure intuition in this way is implied throughout the First Critique. However, Kant only spells it out clearly in the long footnote to the preface of *The Metaphysical Foundations of Natural Science*: "Granted: that the understanding by its nature contains synthetic a priori principles through which it subjects all objects that may be given to it to the categories, and, therefore, there must also be intuitions given a priori that contain the conditions required for the application of these pure concepts of the understanding, because without intuition there can be no object, with respect to which the logical function could be determined as category, and thus no cognition of any object whatsoever, and hence without pure intuition no principles that determine it a priori for this purpose." (p. 4:475).

requires a principle. It cannot borrow this principle from experience, for in that case it could not serve to establish the unity of the totality of empirical principles under higher ones. Therefore it has to be an a priori principle. Reflective judgement can only give such a transcendental principle to itself, for if it were given to it, judgement would be determinant. Yet because our reflection on the empirical manifold of nature has to “adjust itself to nature” (B XXVII), judgement cannot prescribe this law to nature: nature does not conform to the condition under which we make our – in this regard “quite contingent” (ibid.) – efforts at concept formation. The principle we are looking for can, therefore, only be the following:

As universal laws of nature have their ground in our Understanding, which prescribes them to nature (although only according to the universal concept of it as nature); so particular empirical laws, in respect of what is in them left undetermined by these universal laws, must be considered in accordance with such a unity as they would have if an Understanding (although not our Understanding) had furnished them to our cognitive faculties, so as to make possible a system of experience according to particular laws of nature. (B XXVII)

Kant quickly adds the proviso that such an understanding must not be assumed to actually exist. Only the idea of such an understanding serves reflective judgement as its principle. Because we assume that the empirical laws have been “furnished” for our cognitive faculties this leads to the central concept of purposiveness. The contingent agreement of the laws of nature with the transcendental laws of our understanding is only imaginable for us if we assume that nature is purposive in its empirical manifold for our limited cognitive capacities. Therefore the purposiveness of nature is a particular a priori principle originating in reflective judgement. We need to employ this principle in our reflection on the diversity of nature. And although this principle is different from practical purposiveness, as it manifests itself in human artefacts, it is arrived at in analogy with such practical purposiveness. Having introduced the principle of judgement in section IV Kant then gives a deduction of it in the next section.

3.1.2. Section V: the principle of the formal purposiveness of nature is transcendental

The fifth section of the introduction again opens with a definition, this time of what is to be understood under a transcendental principle. Kant defines it as follows: “A transcendental principle is one by means of which is represented, *a priori*, the universal condition under which alone things can be *in general* objects of our cognition.” (B XXIX) In this section Kant sets himself the task of deducing the principle of judgement as such a transcendental principle. Because we were told in the previous section that this principle does not prescribe anything to nature but is merely a subjective principle for the reflec-

tion on nature, we may expect that, in this case, a “deduction” cannot provide an answer to the same question that the deduction of the categories provided in the First Critique. All this deduction must show is (1) that this principle is not arbitrary and (2) that we are entitled to use it in our empirical research.

To clarify the specific nature of a transcendental principle Kant contrasts it with a metaphysical principle. Anticipating the detailed argument that develops this idea in the *Metaphysical Foundations of Natural Science*, where he gives a philosophical exposition of the concept of matter which I shall examine in the next chapter, he says that a metaphysical principle represents “the a priori condition under which alone objects, whose concept must be empirically given, can be further determined a priori.”¹¹

If we consider bodies – according to a merely transcendental principle – as changeable substances, we can know that their changes must have a cause. However, if we base our consideration on a given empirical concept, that of body defined as “a movable thing in space”,¹² we can know a priori that the cause of change must be an external cause. Now, Kant argues that the reason why the principle of the purposiveness of nature regarding the diversity of her empirical laws is a transcendental principle is the following: the concept of objects standing under this principle is “only the pure concept of objects of possible empirical cognition in general”.¹³ The last qualification, “in general”, is the hallmark of a transcendental principle. It means that all empirical differences between the objects of actual experience are bracketed. It is the concept of empirical objects “as such”. However, the concept of an object of possible empirical cognition in general is richer and more concrete than the objectivity established by and grounded in the categories of the pure understanding. It contains nothing specific, yet it is nevertheless a concept that is meant to refer to a multitude of actual objects. However, despite its reference to empirical content, this principle is still a priori because it requires no further or more particular reference to experience.

As evidence for the transcendental character of the principle of judgement, Kant adduces three examples of the “sentences of metaphysical wisdom” (B XXXI) which guide scientific research and which he had already dealt with at greater length in the Appendix to the Dialectic.¹⁴ They are, among others:

- Nature takes the shortest way (*lex parsimoniae*)

11 MFNS, B XXIX.

12 *ibid.*

13 *ibid.*

14 Compare CopR, B 670ff.

- Nature makes no leaps (*lex continui in natura*)
- Nature's empirical variety is unity under a few principles
(*principia praeter necessitatem non sunt multiplicanda*)

According to Kant, any attempt to explain the origin of these and similar fundamental assumptions about nature from psychological origins, by deriving them from the way scientists actually look at nature, goes against their true status. It does so because "they do not tell us ... how we judge, but how we ought to judge" (B XXXI), i.e. these principles are meant to have a logical objective necessity they could not have if they were of purely empirical origin. An empirical origin being ruled out for these principles, their origin has to be transcendental and as such it requires a transcendental deduction. In providing the deduction of the principle of purposiveness, from this point of his argument onwards, Kant begins to repeat his main claims and arguments already stated. He does so in slightly varied but nevertheless essentially identical form. Reduced to its basic structure the deduction of the Principle of Judgement runs as follows:

1. The general laws of nature as the object of our senses are necessary because, without these laws, we would not be able to imagine a nature as cognizable through perception. Experience, which Kant has defined as the determination of objects through perception,¹⁵ only becomes intelligible if such laws are assumed. These general laws are the result of the application of the categories to the a priori condition for the possibility of intuition, i.e. they are transcendental determinations of time, time being the more fundamental form of intuition of the two we have, for it comprises inner and outer intuition: all things in space are also in time, but not all things in time are also in space.
2. Over and above these purely formal time-conditions the objects of our empirical knowledge are determined in further ways because their empirical content is left undetermined by them.
3. Specific empirical causal laws must also be assumed to be necessary laws.¹⁶ However, due to the limitations of our cognitive abilities, this necessity is incomprehensible to us.
4. The concept of nature as a totality of a potentially infinite multitude of empirical laws requires that these laws, which for our insight are merely contingent, nevertheless cohere in one unitary system. If we did not assume that the multitude of the different

¹⁵ Compare CopR, B 218.

¹⁶ See *MFNS*, A 469: "And so every doctrine of nature must according to the demands of reason ultimately aim at natural science and terminate in it, inasmuch as the necessity of laws attaches inseparably to the concept of nature..."

objects of nature and of the laws governing them reflected only a surface phenomenon of an underlying unity, the supposition of a coherent connection of empirical cognitions into one whole of experience would not be justifiable.

5. In its efforts to unite the contingent empirical manifold, judgement therefore *must presuppose* that what is contingent from the point of view of our finite powers of insight nevertheless contains in itself a unity, although we can merely think, not understand this unity.
6. This unity in the potentially overwhelming diversity of the empirical world is only intelligible for us in terms of the purposiveness of the objects of nature for our efforts to conceptualize them. Reflective judgement, therefore, has to look on nature's empirical laws as though they had been arranged in accordance with this requirement of ours. And this is what the Principle of Judgement expresses.

Leaving out the above-mentioned repetitions, I will now note a number of additional points that need to be considered, for without them an account of Kant's treatment of the Principle of Judgement would be incomplete.

Important and much-quoted is Kant's claim that the contingent laws of nature can only be regarded as "so-called laws" (B XXXV), echoing a statement of the First Critique in which he contended that there is endless conjecture in natural science and that "certainty is not to be counted upon" (B 508).

In order to impress on his readers the necessity to assume the Principle of Judgement as a "guiding thread" for experience he paints an epistemological horror-scenario in the following thought experiment:

For it might easily be thought that, in spite of all the uniformity of natural things according to the universal laws, without which we should not have the form of an empirical cognition in general, the specific variety of the empirical laws of nature including their effects might yet be so great, that it would be impossible for our Understanding, to detect in nature a comprehensible order; to divide its products into genera and species, so as to use the principles which explain and make intelligible one for the explanation and comprehension of another; or out of such confused material (strictly we should say, so infinitely various and not to be measured by our faculty of comprehension) to make a connected experience.¹⁷

In this text Kant uses an alternative way of formulating the Principle of Judgement: the assumption that the objects of nature can be divided into genera and species. It was central to Kant's exposition in the first version of the Introduction to the Critique of Judgement where he also calls it the condition for the possibility "to apply logic to

17 CoJ, B XXXVII.

nature".¹⁸ Of particular importance for the central question of this dissertation is Kant's statement in the above-quoted text that only on the assumption of such a divisibility is it possible to understand how the principles we use in order to explain one aspect of nature can also be used to explain another. If this were not so we could not "proceed from the universal analogy of a possible experience in general to a particular analogy" (B XXXV).

Another alternative way, however, of expressing the principle of judgement is to regard it as "the law of the specification of nature in respect of her empirical laws" (B XXXVII) where it is assumed that it is nature herself that does the specifying and not the concept-generating mind. This way of expressing the principle that although the empirical concepts we arrive at in our reflection on nature are of our own making, we nevertheless have to assume that we classify nature by using them in such a way that nature is dividing *herself*, i.e. when we apply concepts to the particular objects of nature we want them to grasp "something" and not to be impositions of our classifying minds.¹⁹ Not only with regard to the temporal sequence of our perceptions, but also with regard to the order of nature described by our empirical concepts do we assume that nature contains something that "prevents our modes of knowledge from being haphazard or arbitrary" (A 105). One way to approach the question as to the status empirical concepts have in Kant's epistemology would be to ask: what is Kant's answer to the problem of universals? Kant is clearly not a Platonist but, as we see in this chapter, he cannot adopt a merely nominalist position either. Thus he appears to be committed to what one might in characteristically Kantian terms call an "as-if"-Aristotelianism. There seems to be no reason why a world of appearances as opposed to a world of things in themselves should not have room for essences.

This may be illustrated by the following example.²⁰ One could imagine someone wanting to place an old aeroplane into a park as a monument. If there were a law that

18 Pluhar 1987, p. 400, fn 21.

19 It is much easier for us to imagine this because we read this after Darwin and his theory of evolution. In that theory the *specification* of nature occurs in the natural process of *speciation*. Kant anticipated Darwin's theory in § 82 of the Critique of Judgement. He says there that we are unable to know whether "the natural products formerly held to be natural purposes have no other origin than the mechanism of nature" (B 386). Nevertheless: "The greatest possible effort, even audacity, in the attempt to explain them mechanically is not only permitted, but we are invited to it by Reason." (ibid.) This shows that Kant would have welcomed Darwin's theory. See also the anticipation in the footnote to § 80: "... e.g. certain water-animals transform themselves gradually into marsh-animals and from these, after some generations, into land-animals. A priori, in the judgement of Reason alone, there is no contradiction here." Kant calls such an hypothesis, however, "a daring venture of reason". See also CopR: "Order and purposiveness in nature must themselves be explained from natural grounds and according to natural laws; and the wildest hypotheses, if only they are physical, are here more tolerable than a hyperphysical hypothesis, such as the appeal to a divine Author, assumed simply in order that we may have an explanation." (B 801).

20 The example is not my own. I remember having read it somewhere but cannot recall where any more.

forbids one to do this it is at least conceivable that the person might claim that the old plane was not “really” a plane (any more) and that it should be re-classified as a work of art, for example, thus circumventing the law that forbids the placing of aeroplanes in parks. This does not describe an implausibility for human artefacts. However, could we entertain the same thought experiment if we were talking about a law forbidding the planting of certain trees in that park or taking dogs into it? Could we claim that the dog on our lead was “not really” a dog? When asking this question we become immediately aware that in the latter case such a re-classification would be most counterintuitive if not something worse, i.e. plainly ridiculous.²¹

Immediately preceding a passage of the A deduction, in which Kant paints a horror scenario similar to the one quoted above,²² he maintains that such a scenario can only be ruled out if we assume that appearances are themselves subject to rules of their own, i.e. to laws not prescribed to them by the understanding. He says:

It is a merely empirical law, that representations which have often followed or accompanied one another finally become associated, and so are set in a relation whereby, even in the absence of the object, one of these representations can, in accordance with a fixed rule, bring about a transition of the mind to the other. But this law of reproduction *presupposes* that appearances are themselves actually subject to such a rule, and that in the manifold of these representations a coexistence or sequence takes place in conformity with certain rules. Otherwise our empirical imagination would never find opportunity for exercise *appropriate* to its powers ...” (original without italics)

The ideas of the introductions to the Third Critique are contained *in nuce* in this passage: both in the claim that the regularity in question is a “presupposition” and in the phrase that the empirical imagination must encounter material “appropriate” to its powers. Appropriate here could be replaced by “fitted to”, which is a teleological way of looking at the relationship between the given material and the possibility of its apprehension.

We cannot leave a consideration of section V of the introduction without taking note of one last important point Kant makes towards its end. He says that, although we neither prescribe the Principle of Judgement to nature nor learn it from her, the principle can be confirmed by our observation of nature. This last point is of utmost importance.

21 It should, perhaps, be noted that Darwin himself might have seen things differently, for he was a nominalist: “In short, we shall have to treat species in the same manner as those naturalist treat genera, who admit that genera are merely artificial combinations made for convenience. This may not be a cheering prospect; but we shall at least be freed from the vain search for the undiscovered and undiscoverable essence of the term species.” (Darwin 1984, p. 456). Some modern evolutionary biologist, e.g. Ernst Mayr, are critical of a purely nominalist view of species.

22 Compare: “If cinnabar were sometimes red, sometimes black, sometimes light, sometimes heavy, if a man changed sometimes into this and sometimes into that animal form, if the country on the longest day were sometimes covered with fruit, sometimes with ice and snow, my empirical imagination would never find opportunity when representing red colour to bring to mind heavy cinnabar.” (A 100).

It demonstrates forcefully that Kant did not see the Principle of Judgement as a merely heuristic device or anthropomorphic illusion. A heuristic device cannot be confirmed; it merely continues to prove useful.²³

3.1.3. Section VI: the pleasure taken in the purposiveness of nature

In section VI of the introduction Kant repeats a lot of what he has said before and it will suffice to mention just two points that must be included in an exposition of his account of the Principle of Purposiveness.

1. Because we cannot comprehend the unity of the empirical laws of nature, despite the fact that we necessarily have to assume it, and because we are unable to prove the existence of this unity, "we are rejoiced (properly speaking, relieved of a want), if we find systematic unity under laws which are merely empirical" (B XL). Kant did not make this point in the first introduction. It brings out the similarity between artistic and scientific endeavours and why Kant could deal with the principles of both in one and the same Critique.²⁴
2. This Principle of Judgement is *indeterminate*. We cannot know how far the purposiveness of nature will extend for our understanding. Again painting a picture of potential – not immediate, but eventual – chaos within the empirical detail of nature, Kant says that:

...if we were told that a deeper or wider knowledge of nature derived from observation must lead at last to a variety of laws, which no human Understanding could reduce to a principle, we should at once acquiesce. But still we more gladly listen to one who offers hope that the more we know nature internally, and can compare it with external members now unknown to us, the more simple shall we find it in its principles, and that the further our experience reaches the more uniform shall we find it amid the apparent heterogeneity of its empirical laws.²⁵

23 In a paper presented to the 7th International Kant Congress (at Mainz in 1990) Busche asks: "Which elucidating value could such a justificatory principle, which is known to be a mere analogy or even an anthropomorphism, still claim to have against a sceptical admission of the incomprehensibility of comprehension itself?" ("Welchen Erhellungswert könnte dieses *als* Analogie, ja als Anthropomorphismus durchschaute Begründungsprinzip noch beanspruchen gegenüber einem begründungsskeptischen Zugeständnis der Unbegreiflichkeit des Begreifens selbst?" (Cf. *Kants Deduktion des Zweckmäßigkeitssprinzips aus der reflektierenden Urteilskraft*, p. 11f.) It seems to me that this question ignores the fact that, for Kant, teleological thinking does not entitle us to *any* objective statement, "whether affirmative or negative" (see the relevant passage towards the end of § 75 of the Critique of Judgement). This point can easily be missed because of Kant's repeated use of the phrase "as if". It seems to, but does not, imply that the teleological way of looking at the world is *known* to be invalid. However, it is merely agnostic with regard to it.

24 Scientists often describe their activity as pleasurable or joyful. An interview with the physicist Richard Feynman about his life in science was published under the title *The pleasure of finding things out* in a book with the same title published posthumously by J. Robbins, London 2000.

25 CoJ, B XLI.

While we have to proceed according to the Principle of Judgement “so far as that reaches”,²⁶ we cannot decide at any point of our investigation of nature either whether or where this principle ends as we lack a determinate rule for doing so. We cannot know where such a limit of its applicability might be reached, for this is impossible in the field of merely empirical knowledge. Even the frustration of our effort to conceptualize the diversity of nature’s phenomena, i.e. to arrive at comprehensive theories, presupposes our prior assumption that it should be possible to find them. This has the important consequence that a strong interpretation of the Principle of Judgement is not possible. At any point of our inquiry into nature her manifold could prove elusive or recalcitrant for our theoretical efforts. That we can never know whether we have reached this point entitles us to go on searching for new concepts and theories that will help us to describe and, hopefully also, explain what initially appeared unintelligible. But there is no guarantee that this effort will *always* be successful. We might have to “acquiesce”, as Kant puts it. Whether the physical world is of finite or infinite intelligibility is a question that cannot be settled a priori. Many contemporary physicists believe that our world contains randomness that can only be described with the help of merely statistical laws, and that, to the extent that it contains randomness, it eludes our efforts to fully understand it.²⁷

These are Kant’s main arguments and claims in sections IV to VI of the Second Introduction to the Third Critique. They raise a number of important questions of interpretation. One of these concerns the relationship between transcendental and formal logic and will be examined briefly in the following subsection. This will serve to position Kant’s arguments presented in the previous section in the wider context of his overall epistemology.

3.2. The relationship between transcendental and formal logic

To understand why and to clarify the exact way in which Kant claims that the a priori concepts *underdetermine* the possibility of experience it is instructive to look at the characterization of transcendental logic in the Analytic of Concepts. To develop a transcendental object-directed logic only becomes necessary for Kant because, for him, formal logic merely deals with the laws of thought. The essential “aboutness of thought”²⁸ is not assumed in this conception of logic. For Kant, general logic is not concerned with the

26 *ibid.*

27 Schrödinger, who initially contributed so much to quantum mechanics, later turned his back on it because he found the irreducible randomness the theory postulates at the quantum level not to his metaphysical liking. See Polkinghorne 2002, p. 26.

28 Williamson 2008, p. 14.

properties of things, but only with thought. General logic “abstracts from all content of the knowledge of understanding and from all differences in its objects, and deals with nothing but the mere form of thought.”²⁹

This conception of logic is not the only and obvious conception. For Aristotle, for example, questions of logic belonged to metaphysics. i.e. to the nature of things, not just thoughts.³⁰ Similarly, the law of non-contradiction for Kant holds only for “knowledge in general, irrespective of content”.³¹ A different conception of logic would have made transcendental logic superfluous: if all logic had been seen as dealing with objects as well as thoughts, the problem of a special object-directed logic would not have arisen. General logic would then have been about different kinds of things. It is the need to establish a reference to different kinds of things that introduces the problem of the applicability of logic to nature and, thereby, the concept of purposiveness into Kant’s epistemology. The difference between formal and transcendental logic is mirrored in two concepts of nature which need to be distinguished in Kant’s epistemology. The word “nature” has two different meanings for Kant which are both referred to in the following quotation from the third Critique and differentiated by me as nature[1] and nature[2]:

The introduction of judgement into the system of the pure powers of cognition through concepts rests on that power’s own transcendental principle: the principle that nature[2] in the specification of the transcendental laws of the understanding (the principles of nature’s[2] possibility as a nature[1] as such), i.e. in the diversity of its empirical laws, proceeds in terms of the idea of a system for dividing nature[2], so as to make experience possible as an empirical system.³²

Nature[1] is the concept of nature that originates in the pure understanding.³³ By contrast, nature[2] is the concept of that nature for which the applicability of logic must be defended and justified. The first concept of nature is not of a nature that could have any empirical features. It is defined by Kant in the *Metaphysical Foundations of Natural Science* as “the inner first principle of all that belongs to the possibility of a thing.”³⁴ Kant provides this as the definition not of nature but of “essence”. However, I think regarding it as the definition of nature[1] is justified by the reference to possibility because the First Critique is concerned with what experience *essentially* is. In the Analytic of Principles of

29 CopR, B 78. Original without italics.

30 Compare *Metaphysics IV*, 4.-6.

31 CopR, B 190.

32 First Introduction to the CoJ; Pluhar 1987, p. 432 (numbers added).

33 For Kant’s identification of the categories with “natural concepts”, see CoJ, BXXIV: “...for in respect of nature (as phenomenon) it is alone possible for us to give laws by means of natural concepts a priori, which really are pure concepts of Understanding.” (...welche *eigentlich* reine Verstandesbegriffe sind, ...) (italics added).

34 MFNS, A 467.

the First Critique, nature is considered as “the sum total of all things insofar as they can be objects of our senses and hence also objects of experience”.³⁵ That the things of nature are considered only insofar as they *can be*, not insofar as they *are* objects of experience, is precisely what makes the investigation of the First Critique transcendental.

This concept of nature is contrasted with the concept of nature in the material sense as “the primal, internal principle of everything that belongs to the existence of a thing”.³⁶ Nature[1] constituted by the mind does not exist in the same way that the objects of nature[2] exist because the former concept concerns only the conditions for the possibility of knowledge. If this important distinction is overlooked, as it so often is, Kant is accused of not realizing that the formal conditions for the possibility of empirical knowledge do not by themselves suffice to explain its possibility.

We have established the following so far: Kant does not just *accommodate* the mind-independent order of the empirical world in his theory of knowledge: he makes a substantial and sustained effort to *integrate it fully* into this theory, of which it is an essential and thus indispensable element.

I will now look at paragraphs 76 and 77 of the Third Critique where Kant gives an additional deduction of the Principle of Judgement, i.e. where he provides further arguments as to why we need to regard the phenomenal world as though its empirical details were amenable to our efforts to find concepts and theories for them.

3.3. Paragraphs 76 and 77 of the Critique of Judgement

These two paragraphs are among the most general and uncharacteristically speculative texts of the entire Third Critique.³⁷ In them Kant steps back from the immediate problem he is addressing and makes the most general observations about the nature of the human intellect. In terms of the fundamental nature of the questions addressed it is, in my view, on a par with central sections of the deduction of the categories in the First Critique. Although the problems dealt with by these sections arise out of the antinomy of judgement, i.e. the apparent conflict between the demand to explain certain products of nature, i.e. organisms, in purely mechanistic terms, and the impossibility of doing so,

35 *ibid.*

36 MFNS, A 467. This is a definition of nature in the Aristotelian sense, i.e. as that of real essence. See also the opening of § 16 of the *Prolegomena*: “The word “nature” assumes yet another meaning, which determines the object, whereas in the former sense it only denotes the conformity to law of the determinations of the existence of things generally.” (*Prolegomena*, 4:295).

37 H. Cassierer calls § 77 “perhaps the most interesting in the whole of the Critique of Judgement” (H. Cassierer 1970, p. 371).

and the resultant need to consider them according to teleological principles also, the ideas developed by Kant are of such a general nature that they are also relevant to my main interest in the systematicity of knowledge. The solution of the antinomy of judgement shows for the particular case of the explanation of organisms that mechanistic and teleological principles can be complementary. I think that this specific result can be transferred to the more fundamental question relating to systematicity or intelligibility and objectivity generally: they too must be seen as complementary. As in the previous section, in the next section I will first follow the main stages of Kant's argument. I will then again try to clarify them by putting them into the wider context of the First Critique.

As we saw earlier Kant mentions the idea of an understanding different from ours for the first time early in the Second Introduction to the Third Critique when claiming that we must consider the empirical laws of nature "in accordance with such a unity as they would have if an understanding (although not our understanding) had furnished them to our cognitive faculties" (B XXVIII). However, it is only late in the Third Critique that he deals with this idea in a more comprehensive manner, i.e. in paragraphs 76 and 77. While they form a single continuous line of argument, like the three central sections of the Second Introduction to the Third Critique, paragraphs 76 and 77 also contain repeated attempts to capture one basic idea. I will now try to summarize their gist.

Kant begins his exposition with some general remarks about the relationship between understanding and reason which link the topic of this section directly back to the Appendix of the Dialectic we looked at in the previous chapter. He opens his discussion by restating what he claimed in the Appendix of the Transcendental Dialectic, i.e. that the Ideas of Reason are transcendent, and thus, like the Principle of Judgement, allow only of a regulative employment. They are valid only for finite intellects, and this implies that the reason why the thinking of finite beings must be guided by these ideas lies in their (finite) nature and not in the object of their thought. He then makes a very general claim: i.e. that the distinction between the possibility and actuality of things is one that only exists for the intellect of finite beings.³⁸ The reason why a finite intellect has to make such a distinction is that its knowledge originates from the combination of two distinct elements: concepts and intuitions. For an intuitive understanding, an understanding which would not have to look for intuitions in a different source of knowledge, i.e. in sensibility, the distinction between the actual and the possible would not exist.

38 The explanation of the distinction between actuality and possibility in this way is, of course, far from obvious. However, for the sake of following Kant's argument I do not want to take issue with this claim here as the principle aim of this section is to re-construct Kant's arguments.

It “would have no objects but those which are actual.” (B 340) For an intuitive understanding the distinction between concepts and intuitions could not arise and, thus, neither would there be a difference between the existence of things and their being merely thought of, for it would have “a faculty of a complete spontaneity of intuition” (B 348). Moreover, the distinction between some objects, that do not exist, but could come to exist, and others which do exist, but might not have existed, i.e. between possibility and actuality, could not exist either for such an understanding. It only exists for our *intellectus ectypus* or “*derivativus*”,³⁹ i.e. which requires data to be given to it from an external source. As Kant reminds us in the opening sentence of the *Transcendental Aesthetics*, for our finite intellect, intuition is that “to which all thought as a means is directed”,⁴⁰ i.e. our intellect is ancillary, not original.

Our understanding proceeds in its cognition from the analytical-universal,⁴¹ i.e. from concepts, to the particular given in empirical intuition. It leaves the manifold encountered in intuition undetermined and must leave its determination to judgement. However, we can form the idea of another kind of understanding:

... which, being, not like ours, discursive, but intuitive, proceeds from the synthetical-universal (the intuition of a whole as such) to the particular, i.e. from the whole to the parts. The contingency of the combination of the parts, in order that a definite form of the whole shall be possible, is not implied by such an Understanding and its representation of the whole. (B 349)

For our discursive understanding the possibility of a whole depends on its part, but for an intuitive understanding it is the other way around, for it the possibility of the parts depends on the whole. For a discursive understanding this is unimaginable. From our finite perspective, the only whole that can precede its parts is the *representation* of this whole. This is precisely as what Kant defined a purpose in § 10 of the *Third Critique*:

...purpose is the object of a concept, in so far as the concept is regarded as the cause of the object (the real ground of its possibility); and the causality of a concept in respect of its object is its purposiveness (*forma finalis*). Where then not merely the cognition of an object, but the object itself (its form and existence) is thought as an effect only possible by means of the concept of this latter, there we think a purpose.

Therefore it is a consequence of our peculiar type of understanding alone that it has to regard some products of nature (organisms) as possible only through a type of causality other than that of the mechanical laws of matter, i.e. only according to final causes. Thus this need to consider them must not be confused with the possibility of the production of such things. It concerns not their being but only the way we have to think about them.

39 CopR, B 72.

40 CopR, B 33.

41 Compare CopR, B 134.

Having introduced the idea of an intuitive understanding in this way, Kant now puts it to use to shed a clarifying light on the distinction between the mechanical and teleological way of looking at organism. This also depends on the peculiarity of our understanding to proceed from the universal laws to the particular things subsumed under them. For us, the particular contains something contingent with respect to the universal. A conformity of the contingent to laws, which our finite intellect can only think as purposive for its needs to unify and conceptualize it, would not exist for an intuitive understanding. But not only would such an understanding not have to reflect on things given to it: it would also not need any determinant principles, which our understanding arrives at "through a determination of the concept of the object" (B 344). And this is equivalent to the insight that our concept of the purposiveness of nature and of nature's products is peculiar only to our finite understanding.⁴² However, although we can come to understand this, this way of looking at nature is nevertheless unavoidable for us. We have to employ this principle "as if it were an objective principle" (B 345).

Up to this point the thought experiment of an intuitive understanding has only been given an epistemological interpretation. It explains why a finite intellect cannot dispense with the teleological way of looking at the world. However, for this thought experiment to solve the antinomy of judgement it must be given a more than epistemological interpretation. In fact, it must be given what one might call an "ontological extension". For the entitlement to consider nature on the whole and some of her products according to both teleological and mechanical principles requires not only that the human mind is of a certain kind but also that nature herself is constituted in a specific way. Kant elaborates this in another thought experiment required to complement the first:

But now it is at least possible to consider the material world as mere phenomenon, and to think as its substrate something like a thing in itself (which is not phenomenon), and to attach to this a corresponding intellectual intuition (even though it is not ours). Thus there would be, although incognizable by us, a supersensible real ground for nature, to

42 The idea of an intuitive understanding also plays a crucial role in the deduction of the categories. See § 16 of the B deduction: "An understanding in which through self-consciousness all the manifold would *eo ipso* be given, would be *intuitive*; our understanding can only *think*, and for intuition must look to the senses. I am conscious of the self as identical in respect of the manifold of representations that are given to me in an intuition, because I call them one and all *my* representations, and so apprehend them as constituting *one* intuition." (B 135) along with § 17: "This principle is not, however, to be taken as applying to every possible understanding, but only to that understanding through whose pure apperception, in the representation 'I am', nothing manifold is given. An understanding which through its self-consciousness could supply to itself the manifold of intuition – an understanding, that is to say, through whose representation the objects of the representation should at the same time exist – would not require, for the unity of consciousness, a special act of synthesis of the manifold. For the human understanding, however, which thinks only, and does not intuit, that act is necessary." (B 138)

which we ourselves belong. In this we consider according to mechanical laws what is necessary in nature regarded as an object of sense; but we consider according to teleological laws the agreement and unity of its particular laws and its forms – which in regard to mechanism we must judge contingent – regarded as objects of Reason (*in fact the whole of nature as a system*). Thus we should judge nature according to two different kinds of principles without the mechanical way of explanation being shut out by the teleological, as if they contradicted one another.⁴³

One can see that in this passage the idea of an intuitive understanding or of an intellectual intuition, as Kant calls it here, is given a new interpretation. Kant claims, in fact, that the Antinomy of Judgement, like that of Reason in the First Critique requires one to make a distinction between the world of appearances and its substrate, which one must think of as “something like a thing in itself”.

This passage also shows clearly that the problems of the systematicity of the empirical laws of nature and of the teleological way of looking at organisms are two aspects of the same problem: *all* classification in empirical concepts for the sake of objective knowledge makes the teleological assumption that nature is a “system”.⁴⁴ When applied to specific cases, purely mechanical laws also need to make assumptions about the existence of particular kinds of matter, and to that extent they too imply teleological thinking.⁴⁵

In terms of the central topic of this dissertation the most relevant lesson is this: the general causal principle is applicable to concrete empirical causal laws of nature only if nature is systematic. We take empirical laws to describe the properties of things, as for example in a laws such as: “metal expands when heated”. But how could we defend the claim that such empirical regularities can be found for *all* changes in nature, if it is not certain whether an empirical concept can be formed for every thing or process we encounter? Thus, only if we would have a way of proving the overall systematicity of nature could the Second Analogy be given a strong interpretation. But Kant clearly states that

43 CoJ, B 352, original without italics. For the idea that this way of looking at the world refers to its totality, see also: “Thus – in the organic products of nature, and specially when prompted by their infinite number, we assume (at least as a permissible hypothesis) design in the combination of natural causes by particular laws as a universal principle of the reflective Judgement for the whole of nature (the world)...” (ibid., B 361).

44 See also the end of § 68 of the Third Critique: “If we have once discovered in nature a faculty of bringing forth products that can only be thought by us in accordance with the concept of final causes, we go further still. We venture to judge that things belong to a system of purposes, which yet do not (either in themselves or in their purposive relations) necessitate our seeking for any principle of their possibility beyond the mechanism of causes working blindly. For the first Idea, as concerns its ground, already brings us beyond the world of sense; since the unity of the supersensible principle must be regarded as valid in this way not merely for certain species of natural beings, but for the whole of nature as a system.”

45 It is worth observing in this context that in Aristotle’s account of teleology, although it makes use of biological examples, e.g. the growth of the different types of teeth in the jaw of an animal, it is the *regularity* with which this happens that calls for a teleological explanation. The crucial argument for the need to think teleologically is: ἀλλ’ ὅταν τοῦτο αἰεὶ ἢ ὡς ἐπὶ τὸ πολὺ γένηται, οὐ συμβεβηκὸς οὐδ’ ἀπὸ τύχης (*Physics* II 8, 199b, 24) (“But when an event takes place always or for the most part, it is not incidental or by chance.”) This regularity can also be encountered in non-biological natural processes, for example in chemical reactions.

this is more than we can prove. The idea of an intellectual intuition "attached" to the idea of "a supersensible real ground for nature" is as much a thought experiment as the idea of an intuitive understanding. It offers no insight into the supersensible. In fact Kant says that we are cut off "from all possible insight" (B 354) into it.

3.4. The idea of an Intuitive Understanding in the Third Critique and the Idea of God in the First Critique

Kant's exposition of the idea of an intuitive understanding strongly invites a comparison with the idea of God as he develops it in chapter 3 of the Transcendental Dialectic of the First Critique on the Ideal of Pure Reason, especially with the arguments developed in section 6 on the physio-theological proof of God's existence (B 648 to B 659).

In my view it has to be said that Kant's exposition of his ideas on teleology and the related concepts is generally marked by a deep ambiguity. On the one hand, the teleological way of looking at nature is said to be a heuristic principle we require for the investigation of the special laws of nature, for we would not even get to know some of nature's laws if we did not proceed according to this principle. Yet, on the other hand, the idea of a purpose of nature is "an alien in natural science" (B 320). We have to pursue mechanical explanations as far as possible, for without them "there can be no proper knowledge of nature at all." (B 316). Thus, while we cannot hope to understand, for example, the generation of even a blade of grass according to purely mechanical principles (B 354), this does not dispense us from trying to do just that. It is not just something we are justified in doing (a *Befugnis*), it is an imperative, something we are obliged to do (a *Beruf*), as Kant says at the end of § 78, in which he resolves the Antinomy of Judgement. Thus it is true to say that we must try to do something we know we cannot succeed in doing.

Similar considerations also apply to the idea of an intuitive understanding. In this case, the tension typical for this area of Kant's thought manifests itself in the following way: on the one hand this idea seems to be identifiable with or at least lead to the idea of God. For although we are warned not to "waste" (B 404) the idea of an architect of the world on the idea of God, Kant says: "Physical Teleology impels us, it is true, to seek a Theology" (B 404), however, "it cannot produce one..." (ibid). The claims of physical teleology being the basis of theology are based on our readiness "to supply by arbitrary additions what is deficient in the grounds of proof" (ibid.) Notwithstanding these warnings, Kant does think of God as an intuitive understanding. Thus in a Nachlassreflexion we find the following:

It is hard to see how an intuitive understanding other than God's could exist. For it knows in itself as the primordial ground (and archetypo) the possibility of all things; but finite

beings can not know by themselves other things, because they are not their creators, unless we are dealing with mere appearances, which they can cognize a priori. This is why we can know the things in themselves only in God.⁴⁶

It is not that the intuitive understanding is identified with God, instead it is impossible to conceive of God in any other way.⁴⁷ Kant had already done this in the First Critique. At the end of the Transcendental Aesthetics he addresses the problem that a transcendental realist view of space and time would pose insurmountable problems for natural theology. He says:

In natural theology, in thinking an object [God], who not only can never be an object of intuition to us but cannot be an object of sensible intuition even to himself, we are careful to remove the conditions of time and space from his intuition – for all his knowledge must be intuition, and not *thought*, which always involves limitations. (B 71)

If space and time were conditions of the existence as things in general, i.e. if everything that exists must exist in space and time, they could not be “removed” from the consideration of anything. Kant then identifies God’s intellect with an intuitive understanding:

As conditions of all existence in general, they must also be conditions of the existence of God. If we do not thus treat them as objective forms of all things, the only alternative is to view them as subjective forms of our inner and outer intuition, which is termed sensible, for the very reason that it is not original [=achetypical], that is, is not such as can itself give us the existence of its object – a mode of intuition which, so far as we can judge, can belong only to the primordial being. (B 71)

Not surprisingly, then, this same tension can also be found in Kant’s treatment of the teleological proof of God’s existence in the First Critique, for it involves essentially the same kind of considerations as those developed in the context of the Third Critique. This proof “always deserves to be mentioned with respect” (B 651). However, while the “ever-increasing evidence” (B 652) for the systematic order of the world, although only empirical, is so powerful, that just “one glance at the wonders of nature and the majesty of the universe” (ibid.) can dispel doubts regarding the existence of a supreme author of the world, and make this conviction “irresistible”, this cannot be accepted as a proof, for it lacks the “apodeictic certainty” (B 652) required of a proof.

46 Reflexion 6048 (Akademieausgabe vol XVIII) See also Reflexion 6048: “The divine understanding is called the highest and pure understanding, which knows things unconditionally as they are in themselves. It does not depend on sensibility. It is no receptivity, but absolute spontaneity. It is the intellectus originarius, no intellectus derivativus. Its knowledge are intuitions, not concepts, yet not sensible intuitions, but ideas which do not presuppose the things, but make them possible.”

47 This reflection addresses another important issue. It identifies “the things in themselves” with the way they are conceived from God’s perspective. In the last two of his Gifford lectures (*Thought and Reality*), delivered in 1996, and only recently published, Michael Dummett explores exactly this idea: i.e. that reality as it is in itself should be identified with the way God sees it. I think that this is a way of looking at Kant’s distinction between appearances and things in themselves that can throw a clarifying light on it. It is something I cannot pursue here, however I shall return to it in the final chapter of this dissertation. The similarities between Kant’s and Dummett’s views appear to run very deep and to merit close examination.

In all of these cases Kant appears to give us something with the one hand only to take it away again with the other. For one has to ask: how can we hope to reveal hidden truths about nature, if the principle that leads us in finding them is pejoratively regarded as “merely heuristic”? It seems that we have to do both: we must hope that the assumption of the systematicity of the empirical world will “open[ing] out new paths” (B 708) for our investigations, but cannot, at the same time, rule out that this assumption may not be corroborated by our actual experience in each and every case.

How can the “focus imaginarius” (B 673) provided by the Ideas of Reason and the idea of an intuitive understanding as the cause or ground of the world be considered to be an illusion we have come to recognize for what it is and at the same time guide our investigation in the hope of revealing aspects of reality? Would one not have to agree with Michael Dummett when he observes: “One cannot argue to how things are from how they would be in circumstances one believes not to obtain”?⁴⁸ The same point was made by Trendelenburg many years earlier, in this case directed at Kant specifically:

The assumption, that the concept of a purpose is regulative, but not constitutive, contradicts itself, for it can only be a *genuine* rule, if it at the same time posits the truth of its perspective. ... Where... the subjective rule of a purpose is to be applied is decided by the essence of a thing, and it cannot therefore limit itself to the narrow circle of a purely subjective perspective, *rather it takes its determination from the object*. In this way Kant's view leads beyond itself.⁴⁹

Can Kant accommodate such criticism? I think he can. He says in the A deduction that the concept of a transcendental object, which is the same in all our knowledge, “is what can alone confer upon all our empirical concepts in general relation to an object, that is, objective reality.” (A 109) The object, from which the determination of the rules (or concepts) of the understanding is taken, to adopt Trendelenburg's phrase, is for Kant the “Gegenstand überhaupt”, the “X” (A 104) of the deduction. It gives all our empirical concepts a relation to empirical reality, if not their *specific* object. As we have seen, Kant does not “posit the truth” of what the Ideas of Reason and the Principle of Judgement ask us to seek. Yet we must always remind ourselves that it is not known to be an invalid way of looking at the world (which would make it self-contradictory). As we saw earlier in this chapter, for Kant teleological thinking does not entitle us to *any* objective statement,

48 “The Metaphysics of Time”, p. 96. In: Dummett, p. 2004.

49 Trendelenburg, *Der Zweck*. Quoted according to Baummanns 1965, p. 125: “Die Annahme, dass der Zweck regulativ sei, aber nicht konstitutiv, ist mit sich selbst in Widerspruch, indem er nur eine wirkliche Regel sein kann, wenn er zugleich die Wahrheit seiner Betrachtungsweise setzt. ... Wo ... die subjektive Regel des Zwecks soll angewandt werden, das entscheidet das Wesen der Sache, und sie vermag sich daher selbst nicht in dem engen Kreis einer bloß subjektiven Betrachtungsweise abzuschließen, und bestimmt sich selbst aus dem Objekt. So führt Kants Ansicht über sich selbst hinaus.”

“whether affirmative or negative”.⁵⁰ This point can easily be missed due to Kant’s repeated use of the phrase “as if”. It seems to, but does not, imply that the teleological way of looking at the world is *known* to be invalid. I will now turn to the assessment of the interpretations of the Principle of Judgement advanced by other critics.

4. Analysis and assessment of some rival interpretations

Having reviewed Kant’s claims and arguments we are now well prepared to look at some rival interpretations of his Principle of Judgement. In this section I shall examine three rival interpretations of the Principle of Judgement which have been advanced by major commentators. I will also briefly assess Guyer’s claim that there is a radical shift in Kant’s epistemological views from the First to the Third Critique. I hope that the comparison of my reading of the Principle of Judgement with those advanced by Guyer, Allison, Kitcher and Abela will increase the plausibility of my particular interpretation and also help to further articulate it. It will also afford an opportunity to discuss Kant’s views in more detail. However, before I turn to the readings of Allison, Kitcher and Abela, I first want to briefly consider Guyer’s claim that a fundamental shift in Kant’s epistemology occurred between the First and Third Critique.

4.1. On Guyer’s claim of a shift between the First and Third Critique

I will start by looking at one passage from Guyer’s *Kant and the claims of knowledge* which, in my view, clearly demonstrates that he does not properly acknowledge Kant’s crucial distinction between metaphysical and physical connections which we looked at in chapter one when discussing Friedman’s interpretation of the Second Analogy. I believe that it shows how this leads Guyer to a misrepresentation of the relationship between the First and Third Critique:

... Kant assumes not merely that particular causal connections must be necessary relative to causal laws under which they are subsumed but also that the causal laws themselves must be necessarily true.⁵¹

I think that as a result of our entire discussion of the question as to how the Second Analogy should be understood we have seen that Kant does not make either of these two claims Guyer ascribes to him in the above quotation. For we saw that, according to Kant, we have no insight into the necessity of special causal laws. We saw that he says that in natural science we are dealing with endless conjecture and that we cannot count on any certainties.

50 See the relevant passage towards the end of § 75 of the *Critique of Judgement*, B 338.

51 Guyer 1987, p. 369.

We have no insight into the necessity of special laws; in fact we “cannot form the least conception a priori of the possibility of dynamical connection.”⁵² They are unfathomable.

According to Guyer, Kant concedes in the Third Critique that the necessity of special laws of nature can be established only by reflective rather than determinant judgement. For Guyer this concession amounts to an acknowledgement that the investigation of the conditions of the possibility of determinant judgement, supposedly the main task of the First Critique, “can yield only conditional and not absolute necessities.”⁵³ I think that these assumptions show that Guyer has an exaggerated view of Kant’s project in his First Critique. As I understand Kant he does not want to prove that there are absolute necessities in nature. In fact he clearly states that such a proof would be impossible:

Had we attempted to prove these analogies dogmatically; had we, that is to say, attempted to show from concepts ... that every event presupposes something in the preceding state upon which it follows in conformity with a rule ... all our labour would have been wasted.⁵⁴

Kant is fully aware that special laws are contingent and that knowledge of them is only an aspiration and can merely be hoped for, not safely assumed. Thus I think that Kant’s aims are much more modest than Guyer assumes. Based on his reading of the First Critique, Guyer sees a major shift in Kant’s thought by the time he wrote the Critique of Judgement:

He no longer thought that we simply have a priori knowledge of the forms of experience and purely empirical knowledge of individual laws of nature, but saw that individual laws of nature are always an amalgam of empirical input and nonempirical assumption.⁵⁵

In my view it is seriously misguided to ascribe to Kant the view that there could be “purely empirical knowledge”. Surely this is exactly what he saw as the basic error of empiricism! The account the Critique of Pure Reason gives of the possession of a priori knowledge is not a case of “simply having” it. Guyer exaggerates the certainty Kant claims for our a priori knowledge. I think we have seen that the desire for certainties cannot look to Kant for comfort. Consistent with this misunderstanding, in fact based on it, we saw in the previous chapter that Guyer follows Kemp-Smith’s mistranslation of what is one of the more crucial passages in the Appendix to the Dialectic where Kant says that the systematicity reason brings to the application of the understanding *corroborates* its correctness.⁵⁶ Ascribing to Kant the view that empirical knowledge can be certain,

52 Critique of Pure Reason, B 798

53 *ibid.* I thus reach the same conclusion as van Kirk: “The necessity and universality claimed for the principles of the Analytic is in no way impuned by the discussion of reflective judgement in the third Critique because these principles were limited to the form of experience and not its content.” van Kirk 1990, p. 223.

54 CopR, B 264.

55 Guyer 2003a, p. 39.

56 See CopR, B 708.

Guyer mistranslates this as saying that systematicity *guarantees* the correctness of the application of the understanding. Yet, in my view, this is completely at odds both with the spirit and the letter of Kant's epistemology. To recall but two examples that we have already come across: (1) Just before the deduction Kant says that appearances could be such "that the understanding should not find them to be in accordance with the conditions of its unity" (B 123), in which case "everything might be in such confusion" (ibid.) that the category of causality would be inapplicable. (2) In the Appendix to the Transcendental Dialectic Kant contemplates the possibility that the manifold of experience could present us with "a variety so great that the most acute understanding could not discover the least similarity" (B 681) in it. In such a situation no empirical concepts could be formed and thus no categories applied either.

That Guyer misunderstands the relationship between categories and empirical concepts can also be seen from the fact that he regards reflective judgement as a *special form* of judgement that can be contrasted to the type of judgement "apparently employed in ordinary empirical knowledge", i.e. determinant judgement. In doing so, in my view, he overlooks that reflective and determinant judgement can only be employed *simultaneously*. There can be no determinant empirical judgement that does not make use of concepts that are the result of acts of reflection; and all reflection aims at determination. Thus, rather than following Guyer in thinking that Kant needs to retract the "metaphysical picture of the First Critique", I think that Guyer's interpretation of the First Critique stands in need of revision.

In his essay *Reason and Reflective Judgement* Paul Guyer characterizes the relationship between determinant and reflective judgement as follows:

Determinant judgement may be set the task of applying the abstract concepts to sensible particulars, but if intermediate concepts have to be discovered in order to do that then reflective judgement may be needed to find those concepts and thus complete the task assigned to determinant judgement.⁵⁷

Again, I do not think that we need to think of this in the way Guyer does, i.e. as reflective judgement *completing* the task that determinant judgement begins. In my view we need to think of it not as two different steps but as two aspects of *every* step of all object-directed thought. This may be illustrated by looking at two aspects of every language: we distinguish between the natural and the cultural aspect of language, one being necessary and essential and the other contingent and accidental. It is part of human nature to have language. Any given language, however, is the accidental product of a

⁵⁷ Guyer 2003c, p. 12.

certain cultural background. The two aspects are clearly distinguishable, yet inseparably intertwined in every concrete speech act. Likewise: all empirical judgements aim at the truth but they need to be expressed with the help of open, merely empirical concepts. One might say that for Kant empirical concepts are only “so-called concepts” (in analogy to his phrase “so-called laws”).⁵⁸ Therefore, while we aim at and intend the truth, we are aware that all we can do is hope to be on target. We can never be certain of it. Approximation is all that we can hope to have achieved, certainty being forever elusive to finite minds like ours.⁵⁹

Commenting again on the First Critique, Guyer says that Kant’s doctrine about the categories amounts to the claim that they “furnish both a guarantee that we can discover empirical laws applying to any empirical intuitions and all the method that we need to discover these laws”.⁶⁰ Indicating that he is interpreting rather than paraphrasing Kant (“Kant’s idea must be...”), he claims that, according to the epistemology of the First Critique, the categories “instruct us to look for particular patterns among empirical intuitions”⁶¹ and that nothing else would be required for the discovery of empirical laws. He thinks that Kant complicates this “simple picture” in the Appendix to the Transcendental Dialectic by making additional assumptions.

I do not think that it is a true representation of Kant’s epistemology to maintain that the a priori laws give us instructions about empirical laws. Kant says that these laws do not give us instructions about but insight into “what can be cognized as an object of experience” (B 165) in general. The transcendental laws do not deal with specific empirical objects. Similarly, in my view, it cannot be said that the arguments of the Appendix complicate a simple picture. I think that Guyer’s “simple picture” is nowhere painted by Kant himself, as this would amount to the claim that the Transcendental Analytic was meant to stand on its own. There are strong reasons not to think so which we looked at in the previous chapter and where we saw that the Appendix makes its own constructive contribution to the overall Transcendental Logic, of which the Transcendental Analytic is only the first half. This may suffice as an assessment of Guyer’s view on the relationship between the First and Third Critique. I shall now turn to Abela’s interpretation.

58 *Cof*, B XXXV.

59 See also “It became conceivable that, while no absolutely certain knowledge might be possible of any individual object, an asymptotic striving towards perfect knowledge could be grounded.” Baumanns 1997, p. 377 (Es wurde denkbar, dass von keinem einzigen Gegenstand eine absolut sichere Erkenntnis möglich sein könnte, ein asymptotisches Streben nach vollkommener Erkenntnis aber zu begründen sei.)

60 Guyer 2003a, p. 41.

61 Guyer 2003a, p. 40.

4.2. The objectivist interpretation: Abela

That Abela is an advocate of the objectivist interpretation is clear from the fact that his main purpose in *The Demands of Systematicity: Rational Judgement and the Structure of Nature*,⁶² the article I have chosen to analyse and assess, is to argue for a more than methodological reading of the Principle of Systematicity and from the fact that he sees the objectivist and methodological interpretations, ignoring the possibility of the *compatibilist* interpretation I wish to defend in this chapter, as the only two interpretations possible.

To prepare his own argument Abela provides a summary of the problem discussed in this chapter in sections 1 to 3 of his article. I will go straight to sections 3 and 4 where he takes up the challenge of showing why we should adopt a more than heuristic reading of the Principle of Judgement.

Abela sees the virtue of the methodological interpretation in the fact that it seems to do justice to Kant's frequent warning not to affirm a more than regulative role for rational judgement. In line with Kant's caution one could be tempted to see the function of reason in an exclusively regulative way, i.e. in the way in which it enforces rational patterns of connection and inference which are simply "laid over an already determinate representation of reality".⁶³ However, we cannot accept this view for the simple reason that it is at odds with too many passages where Kant contradicts such a restrictive interpretation. Faced with Kant's apparently highly contradictory statements, one might want to adopt Kitcher's view that Kant apparently wished to have it both ways. In order to weaken the plausibility of the methodological reading Abela begins by diagnosing how it is motivated. He sees it as being informed by an empiricist bias. This bias includes the following three assumptions:

1. The deliverances of receptivity are indeterminate.
2. Objectivity is associated with content rather than structure.
3. The space of reasons is separate from the cognitive activity responsible for the discrimination of objects and events.

Abela thinks that it would be a mistake to understand Kant's distinction between constitutive and regulative principles along the lines of the distinction between content and order as this is understood by empiricism. The centrepiece of his attack on the

62 Abela, in Bird 2006, p. 408 – 423.

63 *ibid.*, p. 416.

merely heuristic reading of the Principle of Systematicity is Abela's insistence that we should "resist the urge to deny objective import to principles merely because they enforce cognitive structure".⁶⁴ According to Abela, while it is a plausible doctrine, the identification of the real with empirical content and the rational with the order of this content prevents us from understanding Kant's epistemology because this is not the way he saw this relationship. Abela's interpretation thus faces two problems: (1) to explain the way in which the enforcement of rational structure gives us access to the real and (2) how it is possible that it can do so.

Abela's first response to this task is to look at the Analogies of Experience. While adding no content to what sensibility delivers, they are nevertheless objective principles for the possibility of experience, despite the fact that Kant characterizes them also as only regulative. They are thus an example for the way in which what is regulative can still establish objectivity. Abela urges us to accept the general Kantian lesson that discursive structures make possible "the determinate representation of objects and events by means of the intrinsically indeterminate deliverances of receptivity".⁶⁵ This Kantian model is very different from the empiricist view, which assumes that the objective reality of experience is associated exclusively with the putatively determinate content of sensibility. Abela reaches an important interim result with the following claim:

Consequently, a fully objective role for discursive structure remains a live interpretative option, not in spite of its form-giving rules, but because of this mode of engagement.⁶⁶

While conceding that there can be no uncritical extension of lessons from the *Analytic of the First Critique* to the treatment of the Principle of Systematicity in the *Third Critique*, Abela nevertheless thinks that, for Kant, there clearly is a sense in which the regulative demand of systematicity is linked with objectivity as opposed to a mere imposition of cognitive structure. Abela's claim is that we can make sense of Kant's apparently contradictory claims if we begin to see that there can be a connection between what is rational and what is empirically real.

If we want to make the required shift from "our modes of comprehension to the assertion of inherent, corresponding structures in nature" (p. 417), we have to widen the opening provided by this initial argument. But in doing so we must be forever vigilant against the danger of giving constitutive force to the regulative use of the Principle of Judgement, for we are told:

64 *ibid.*

65 *ibid.*, p. 417.

66 *ibid.*

Kant's prohibition on reading the employment of systematicity in terms of adding any content to the deliverances of the understanding is absolute. The weight of the argument must be borne by considerations aligned wholly to the role of rational structure.⁶⁷

The interpretative challenge Abela has to rise to is, therefore, to show how the infusion of cognitive structures "affirms a substantive, objective unity in nature".⁶⁸ What makes the methodological interpretation so attractive is just this: it avoids a problem that the objectivist interpretation faces, i.e. the problem of how to justify this link between the rational demand for systematicity and the intrinsic structure of nature, for, from an empiricist point of view, this just looks like a "coincidence of transcendent proportions".⁶⁹ Abela insists that the "empirical gap between mind and world" cannot be closed by "bold assertion."

Abela crucially contends that the idea of such a gap between mind and world contradicts the transcendental idealist model of cognition. The assumption that such a gap exists fails to take on board the main lesson of the Copernican Revolution, i.e. that "we bring into the appearances that order and regularity in them that we call nature" (A 125) and that order and regularity can only be found in nature because we have put it there in the first place. Part one of the answer to the interpretative challenge for the more than heuristic interpretation of the principle of systematicity is thus the realisation that this general lesson is as valid in the case of rational comprehension as it is in the case of discursive understanding. In Abela's words:

The entire thrust of Kant's Copernican Revolution is to locate the demands of determinate representation within a framework that builds in a secure bridge linking the discursive, structural components of the cognizing subject with the objects of that mode of cognition.⁷⁰

Yet there are further worries to calm. For this initial answer immediately gives rise to the question as to what secures the formal linkages between what the understanding provides and the unity posited by rational judgement. The possibility remains that the unity of systematicity, which, as we were told before, cannot be derived from the unity of the understanding and is a unity *sui generis*, might remain external and foreign to the structures enforced by the understanding. We must therefore answer the question as to what underwrites the linkage between rational structure and objective reality. Abela offers us the following answer: understanding and reason cooperate. They each supply discursive conditions that together make empirical knowledge possible:

67 *ibid.*

68 *ibid.*

69 *ibid.*, p. 418.

70 *ibid.*

I am suggesting then, that the attribution of systematicity to nature by reflective judgement completes the task initiated by the understanding. Rational judgement offers the conditions for an explicit criterion for empirical truth. The implicit truth conditions employed by the understanding that underwrite the object-directed character of spontaneous representation thus undergo refashioning, extension and correction as comprehension works upon the deliverances of the understanding and infuses it with its own collective unity.⁷¹

We can see that at the centre of Abela's argument is the claim that a general truth structure holds the implicit and explicit truth conditions of understanding and reason together. Abela concedes that the argument offered does not necessarily amount to a departure from the methodological interpretation. However, the difference between the methodological interpretation and his own, he insists, is his claim that systematicity "is of more central importance as a condition for representation proper",⁷² because in our engagement with the world it reaches "all the way down",⁷³ i.e. reason is put in touch with empirical objects via the cooperation of reason and understanding. This, then, is the gist of Abela's complex argument for the objective interpretation of the Principle of Systematicity. I will now comment on Abela's interpretation and the various claims he puts forward in its support.

4.3. Reply to the objectivist interpretation: Abela

The main difficulty with the argument Abela advances in favour of his objectivist interpretation of the Principle of Systematicity can be stated in the following way. He makes two central claims:

- C1: The deliverances of receptivity are intrinsically indeterminate.
- C2: Kant absolutely denies that the employment of systematicity can be understood in terms of adding any content to the deliverances of the understanding.

These two claims appear difficult to reconcile. They immediately give rise to the question as to how it is possible that we experience a determinate order of things. Is one displaying an empiricist bias and a failure to take on board the Copernican Revolution, as understood by Abela, if one ask this question? To put it another way: how can the "infusion" of reason's collective (as opposed to the understanding's distributive) unity turn the essentially indeterminate, raw deliverances of receptivity into a determinate representation of the empirical world? Abela's claim that reflective judgement or reason inform our engagement with the world "all the way down", i.e. down to the way we relate to the world in perception, does not help us out of this aporia. For the question

71 *ibid.*, p. 420.

72 *ibid.*

73 *ibid.*

remains: how can intrinsically indeterminate material put our representation under any kind of “pressure”,⁷⁴ as happens when, according to Abela’s reading of the interplay between understanding and reason, we are confronted with conflicting information? If the deliverances are raw and indeterminate, how is this pressure exerted, or why do we not just use the raw material given in sensibility to constitute a world in which no such conflicts arise? Surely there must be a limit to the degree of this indeterminacy if knowledge is not going to become the production instead of the comprehension of its objects. In line with his priority-of-judgement thesis,⁷⁵ which allocates priority to the formal conditions for the possibility of knowledge, Abela sees the deliverances of receptivity as standing in need of “form-giving”.⁷⁶ However, like all advocates of such a reading, Abela cannot explain from which source the required determination must be supposed to spring.

His interpretation also suffers from lack of clarity because he uses two different metaphors to articulate his position which seem to me to be in tension with each other. He repeatedly talks about the “infusion” (or investment) of rational structures, but then he also speaks of the “enforcement” of (or the modelling according to) these same structures. Now, infusion could be understood as making an existing order visible by shining the light of reason onto an illuminable world of objects, so to speak, whereas enforcement sounds more like reason shaping the way the world appears to us. This metaphor evokes the idea that Abela wants to claim that the world acquires determinate structure through our acts of cognition.⁷⁷

Because Abela’s exposition does not contain an answer to or show an awareness of the aporia of how essentially indeterminate deliverances of receptivity can result in a determinate representation of reality I also find myself in disagreement with Abela when he maintains that the principles of the understanding secure a determinate cognitive relation between the cognizing subject and a world of independent empirical objects. According to the interpretation of the Second Analogy defended in chapter one of this dissertation, because they are purely formal and stand in need of complementation by material conditions of knowledge, these principles merely *help* to establish such a relation⁷⁸ and cannot by themselves secure or guarantee it. It seems to me that, even accord-

74 *ibid.*

75 See Abela 2002, pp. 84–115.

76 Abela, in Bird 2006, p. 417.

77 Some interpretations of quantum mechanics claim that there is a sense in which this is so. But in this case it is not up to reflective judgement to ‘model’ reality. What becomes determinate does not do so as a result of any reflection on the part of the cognizing subject but through an act of measurement.

78 There is no room here to engage more fully with Abela’s interpretation of the Second Analogy, but his claim that the analogies of experience offer a solution to the problem of overcoming the indeterminacy of

ing to Abela's own account, the Second Analogy could not secure such a relationship because in order to do so it would have to contribute somehow to a solution to the problem as to how the intrinsic indeterminacy of the deliverances of receptivity is to be overcome. However, the events to which it can establish a cognitive relationship must remain as indeterminate as the deliverances of receptivity were before this initial determination so that, instead of with the indeterminate deliverances of receptivity, reason is confronted with indeterminate objects and events. It could not be otherwise, for Abela maintains repeatedly that the regulative, structuring principles cannot add *any* content to empirical knowledge, their function being purely regulative. Thus claims (2) and (3) of the above list, which were meant to open the room for the line of argument to follow, already look problematic.

I think one can agree with Abela's claim that objected-directed representations would be impossible were it not for the operation of criteria of empirical truth. But this does not prove anything about the way the empirical world is or has to be. In the same way in which the Second Analogy underdetermines a general causal principle, the Principle of Judgement or Reason underdetermines a general principle of the systematicity of nature. It seems to me that Transcendental Idealism is less rationalist than Abela makes it out to be and at the same time more empiricist.

While Abela emphasizes the need to balance the formal principle of systematicity by the parallel deep structure of nature, he does not spell out what exactly this structure could be. By denying the deliverances of receptivity any intrinsic determination of their own, in my view, he undermines Kant's robust empirical realism. I think that, contrary to Abela's reading, in Kant's epistemology, receptivity delivers not a raw but a determinable material.⁷⁹ I argued in chapter one that the applicability of the principle of causality to the empirical world depends on a contingent fact, i.e. the existence of empirical laws. In the case of reason's or judgement's demand for systematicity we must say: it would be impossible to fulfil this demand if the things of the world and their features could not be systematically ordered. The purely formal condition for the possibility of knowledge, i.e. systematic unity, could not be met if the equivalent material condition for the possibility of empirical knowledge did not obtain *de facto*; i.e. knowledge would be impossible if the

receptivity by offering the discriminating conditions required for object-directed judgement, which he takes to be emblematic of Kant's general approach, seems to clash with the view I defended in chapter one where I argued that the analogies do not help us to determine the actual sequence of events, but only to understand causal laws where we meet them in experience.

79 Thus I agree with Peter Baumanns when he states: "The empirical succession of representations gives witness to an order of nature with complete passivity." (*Die empirische Vorstellungsfolge gibt mit völliger Passivität von einer Naturordnung Zeugnis.*) (Baumanns 1997, p. 688).

things of the world themselves were not amenable to a systematic order independent of and prior to the workings of reason.

More generally it seems to me that, while wanting to be an apologia, Abela's interpretation of Kant runs the risk of leaving the original Kantian position behind; for he ends up with a view in which systematicity is so near the centre of Kant's account of cognition that it is doubtful whether it has not become constitutive for knowledge after all, although Abela wants to be faithful to Kant's claim that it is not.

At no stage of his argument does Abela mention material transcendental conditions. He only refers to systematicity in the abstract. He comes close to considering material transcendental conditions when he says that the deep structure of nature needs to be "amenable" to the infusion of systematic order, but then veers off this direction which might have led him to the consideration of material transcendental conditions. He seems to shy away from the assertion that contingent facts play an essential role as conditions for the possibility of knowledge. Thus I cannot agree with Abela either when he thinks that Kant's reference to the requirement to affirm an intrinsic structure in nature is his way of referring to the necessary involvement of truth considerations, i.e. cognitive structures. This interpretation seems to me to tone down an objective, externalist claim of Kant's to a merely subjectivist, internalist claim. I think that Kant means what he says: empirical knowledge is only possible if and to the contingent extent that nature itself is *de facto* systematic. Abela's in my view subjectivist interpretation, which lets objectivity be grounded in truth conditions, ignores the fact that the conditions for the possibility of empirical knowledge are by no means entirely, or indeed primarily, subjective. A confirmation of this interpretation comes in the form of a rarely-quoted passage from the *Methodenlehre*, where Kant says:

... we cannot make use of the knowledge of nature in any serviceable manner in the building up of knowledge, unless nature has itself shown unity of design. For without this unity we should ourselves have no reason, inasmuch as there would be no school for reason, and no fertilisation through objects such as might afford materials for the necessary concepts. (B 845)

Here we find the following argument: if the objects of the world were such that they would not provide material for reason's unifying attempts, i.e. if they themselves were not systematic, we would have no reason, because no occasion to exercise it. Thus we have, in fact, a double dependency here: without reason we would have no understanding and without understanding we could not arrive at a determinate representation of reality. Yet the opposite also holds: if we did not exist in an intrinsically systematic world, we would have no reason. The dependence is thus an essential interdependence. This cannot be captured at all by the methodological and not fully by those objectivist interpretations that merely talk of the need to postulate such an order. I think it is best captured by the NPT.

Both the methodological and Abela's objective interpretation think that formal transcendental conditions of knowledge, i.e. cognitive structures, suffice to account for the possibility of knowledge. The issue dividing both parties is merely the status of the Principle of Systematicity: i.e. whether it is a purely heuristic assumption or whether it must also be given the status of a postulate about the way the world is.

To sum up: Abela does not point out that the contingent existence of systematic order in nature has, in fact, a transcendental status. In his interpretation, any determinate empirical content is the result of the application of the joint formal transcendental conditions of the understanding and of reason. Against this I have argued that determinate empirical content is not the result of the joint application of the formal transcendental condition of the understanding and of reason but that it ranks itself among the conditions for the possibility of empirical knowledge and that this is evidence for Kant's empirical realism, which, in my view, is much more robust than Abela's ultimately subjective interpretation allows. I will now look at Kitcher's interpretation.

4.4. The methodological interpretation: Kitcher

It is not easy to categorize Kitcher's interpretation according to the three different types I suggested at the outset of this chapter because, as we will see shortly, he is himself aiming at something akin to a compatibilist interpretation. However, because his reading is ultimately less realist than I think Kant's Principle of Judgement should be understood, I have classified his interpretation as methodological.

To begin with I wish to recapitulate the main points of Kitcher's seminal article *Projecting the Order of Nature* on Kant's philosophy of science. I shall then come back to my exposition and critically assess Kitcher's main claims and arguments. Kitcher's article is divided into five sections. Of central importance to the topic of this dissertation are the first three sections,⁸⁰ especially Kitcher's views on the way he thinks the Principle of Reason or Judgement relates to the argument of the Second Analogy of Experience. I am therefore going to concentrate on these sections in the following exposition.

The article starts with a thought experiment: the readers are asked to imagine that, at the end of inquiry, they hold in their hands a volume with the title *Total Science*. What would it contain? Would it describe objective causal laws and essential properties of natural kinds? Or would such a book be a manual that helps us to anticipate our future experiences? Both of these positions have their merits and their downside. While science

⁸⁰ The fourth section briefly looks at issues in the *Metaphysical Foundations of Natural Science* and the final exploratory section is given more to tentative considerations than the exposition of definitive claims.

seems to testify to our desire to understand the world, to gain objective insight, the natural necessities and kinds that it postulates have worried epistemologists ever since Hume. Thus the price we pay for science in the realist interpretation is the “epistemological opacity”⁸¹ of its central concepts. As opposed to this Kitcher paints a picture that is modelled on the Mach-Duhem conception of science: while it maintains epistemological purity by dropping the troublesome notions of cause and kind, it renounces real insight into facts about the structure of a mind-independent world. We may “feel at home with the phenomena”,⁸² yet we have to give up our desire to understand them.

After some further excursions into the history of science Kitcher then proceeds to his first substantial claim. He contends that Kant succeeds in “charting a *via media*”⁸³ between these two extreme positions. Moreover, in what amounts to a strong challenge to my own view of this issue, Kitcher makes the claim that objective understanding for Kant does not depend on mind-independent natural necessities and kinds. Kitcher sees evidence of a view very similar to Duhem’s and Mach’s subjectivism in Kant’s claim at the beginning of the Transcendental Dialectic that the maxims of reason have no objective validity.⁸⁴ In the Appendix to the Transcendental Dialectic,⁸⁵ however, Kant is willing to concede a regulative use of reason. Although he regards this text as obscure and “perilously close to inconsistency”,⁸⁶ Kitcher sees in it the heart of Kant’s philosophy of science. The unity of our knowledge, which is projected by reason, provides a truth criterion for the rules established by the understanding. Kitcher finds this puzzling because he assumes that the Second Analogy has already established the fact that all events in the world are subject to causal laws and because nowhere in the section on the Analogies of Experience does Kant indicate that reason is needed to confer lawlike status on the special as opposed to universal laws of nature. Given this reading of the Second Analogy one must indeed wonder how such magic is to be performed by following a maxim that is supposed to have no objective validity. As he himself succinctly puts this puzzle:

The starkest form of the contradiction lies in the declaration that the maxim of unity has no “objective validity” coupled with the refusal to treat that maxim as a mere piece of subjective advice.⁸⁷

81 Kitcher 1972, p. 203.

82 *ibid.*, p. 203.

83 *ibid.*, p. 204.

84 CopR, B 362.

85 Kitcher keeps referring to the appendix to the chapter on The Ideal of Pure Reason, but from the content of it it is clear that it is an appendix to the whole of the Transcendental Dialectic.

86 *ibid.*, p. 205.

87 *ibid.*, p. 213.

Formalizing his interpretation Kitcher sees in Kant three claims, which may be paraphrased as follows:

- (1) The pure understanding prescribes laws to nature in general.
- (2) We need to know special laws of nature because the knowledge of the general laws of nature issued by the pure understanding underdetermines experience.
- (3) Special laws of nature are in some sense necessary and we must be able to recognize this necessity, yet it cannot be recognized empirically.

These three claims seem to be unsatisfiable. According to (2) we must be able to recognize special regularities in nature as necessary while (1) and (3) seem to preclude such knowledge because these laws lie beyond what can be known a priori (1) and because this knowledge cannot be arrived at empirically (3). The way out of this aporia, according to Kitcher, is Kant's view that necessity "accrues to lawlike statements in virtue of their incorporation in a system"⁸⁸ which science establishes by following particular rules. Kitcher then sets himself the task of formulating three schematic Kantian claims in such a way that these can be brought into harmony. Kitcher suggests the following as these three schematic Kantian claims, abbreviated and again in paraphrase:

- (a) A law is rationally accepted as a law of nature if it is a statement that plays the role of a law in an ideal systematization of our beliefs.
- (b) There is some sense of necessity in which empirical laws are necessary.
- (c) There is a sense of objective validity that the rules that govern systematization do not possess.

Attempting to resolve the tensions between (a), (b) and (c) Kitcher proposes the following methodological principle:

- (d) "Let H be a set of sentences stating Hume facts, including all and only the Hume facts that we are justified in accepting. Suppose that S provides the best systematic unification of H. Then we are justified in accepting S."⁸⁹

Now, this gives rise to the following question: on what ground does (d) rest? One might think it rests on:

- (e) Nature is systematically unified.

⁸⁸ *ibid.*, p. 209.

⁸⁹ Kitcher 1972, p. 211. Hume facts are defined by Kitcher as follows: "A paradigm of a Hume fact would be the fact that a middle-sized object has an observable property at a particular time." (*ibid.*, p. 216).

However, Kitcher thinks that Kant could not accept (e) for he would have to see it as either a cryptic and misleading way to state (d) or as senseless. Because if we accept (e), we have stepped into the realists' camp. Since the rationality of the realists' approach depends on contingent facts about the world, we would then have to accept that the connection between theoretical understanding and unification might be a matter of mere luck.

For those subscribing to the Mach-Duhem view of science (d) can only be seen as a convenient mnemonic device. They see it as a principle that eases the burden of the memories of finite minds. In line with his earlier claim that Kant has succeeded in charting a *via media* between the realist and subjectivist views of science, Kitcher again maintains that Kant's position lies between these two views. But how can a middle ground between these opposites be found? Kitcher suggests that we can approach an answer to this question by considering what realists and their Duhemian rivals have in common: they both presuppose that *Total Science* should contain the whole truth and nothing but the truth. While the realists assume that science aims at uncovering truths about natural laws and the essential properties of natural kinds, their rivals believe that there are no such truths to be uncovered (and that thus there can also be no objective scientific explanation as the goal of science). The question then becomes: what distinguishes the Kantian position from these two rival views? According to Kitcher it is the following:

Kant's proposal ... is that there is an objective notion of scientific explanation, irreducible from setting forth a particular kind of truth, and that the demand for explanation is coequal in importance with the demand for truth.⁹⁰

Because Kitcher sees in Kant's theory of knowledge a necessary connection between explaining and unifying, he takes him to contend that we have reached the aim of finding scientific explanations of the phenomena of nature if we have succeeded in integrating these phenomena into *one* system. This is the case because, according to Kitcher's reading of Kant, the goal of reaching the truth about nature makes no sense apart from the goal of finding explanations for natural phenomena.⁹¹ Clarifying this claim Kitcher points out that the realists and the followers of Mach and Duhem both subscribe to a correspondence theory of truth. They believe that there is a reality independent of human cognition. They only differ in what they accept as belonging to it. Whereas the Duhemians only allow Hume facts, the realists also allow facts about kinds and causes. Kitcher sees Kant as opposed to both of these because he denies that

⁹⁰ *ibid.*, p. 213.

⁹¹ *ibid.*

talk about correspondence makes sense for Kant.⁹² Kitcher then reaches the final step of his outline of a Kantian theory of natural laws by replacing the epistemological description of rational acceptance with an account in terms of truth. As an ontological correlate of (a) above he offers the following:

(A*) L is a law of nature just in case L is a statement playing role RL in an ideal systematization of the experience of an ideal subject whose experience was ideally comprehensive (and similar clauses for causal dependencies and natural kinds).⁹³

In section III of his article Kitcher then tries to show that the doctrine extracted from the Appendix to the Transcendental Dialectic and from the Third Critique, which I tried to summarize above, completes a project Kant begins in the Second Analogy. While Kitcher thinks that it is difficult to say in which sense exactly Kant takes causal judgements to be necessary, he suggests that Kant thinks causal judgements imply “generalizations that legislate for unactualized possibilities”⁹⁴ and thus have counterfactual-sustaining force. Regrettably, he declines to explain “the famous (notorious?) example”⁹⁵ of the ship moving downstream I analysed in chapter one. However, he takes it to be uncontroversial that the Second Analogy tries to prove that we cannot avoid making judgements implying some kind of necessity if we are to form judgements about objective events. Kant’s answer to Hume is that we cannot state Hume facts, which are supposed to be unproblematic, unless we employ those very concepts which Hume claims stand in need of justification. In other words, one might say that Humean sceptics are “mocking in their dreams the guardians of their sleep” (Yeats). So while the Second Analogy establishes that there has to be *some* justification for judgements which involve causal dependencies and strong conditionals, it leaves it open what this justification is. In Kitcher’s view this unfinished business is taken up in the Appendix to the Transcendental Dialectic and the Third Critique because these texts explain what justifies our distinction between what are no more than accidental regularities from those that are “endowed with counterfactual-sustaining force”.⁹⁶ This is, I hope, a fair exposition of the main lines of Kitcher’s argument. I do not think that it is convincing. To substantiate this claim I will now assess some of Kitcher’s arguments.

92 *ibid.*, 214. Kitcher alludes here to CopR, A 104: “What, then, is to be understood when we speak of an object corresponding to, and consequently also distinct from, our knowledge? It is easily seen that this object must be thought only as something in general = *x*, since outside our knowledge we have nothing which we could set over against this knowledge as corresponding to it.”

93 *ibid.*, p. 214.

94 Kitcher 1972, p. 219. Italics in the original.

95 *ibid.*, p. 220.

96 *ibid.*, p. 222.

4.5. Reply to the methodological interpretation: Kitcher

I shall concentrate on four main claims which strike me as especially problematic because they all seem to turn Kant into more of an idealist than I think he is. These are: (1) Kitcher's interpretation of the Second Analogy; (2) his claim that necessity is something that can accrue to a statement; what he has to say about (3) contingency and epistemological luck; and his claim that (4) the demands for explanation and truth are coequal. I shall address them in turn.

1. *Kitcher's interpretation of the Second Analogy.* I argued at some length in chapter one that Kant's answer to Hume is not a proof that necessary laws of nature exist. I maintained that all Kant wants to defend is our right to make use of the notion of causality. Kant takes himself to have shown that Hume's doubts have failed to discredit the notion of causality. When Kitcher argues: "Specifically, if we can make judgements about objective time relations among states of affairs, and thus make judgements about objective events, then we have to be able to assert universal statements involving strong conditionals",⁹⁷ I think that his gloss "and thus make judgements about objective events" overinterprets the Second Analogy. Kitcher's interpretation of the Second Analogy assumes that it tries to prove more than I think Kant wants to prove.⁹⁸ In my view, all he tries to show is that the category of causality is implied in the formulation of Humean doubt: when we want to express our doubt as to whether what we regard as an instance of a particular causal law might only be a temporal succession of two states, we have overlooked the fact that, by assuming an objective time relation, we already make implicit use of the concept of causality. What Kant's proof allays is the doubt about the objectivity of the succession, not doubts about the law-governed character of this succession. What Kitcher sees as the intention of Kant's proof is, in my view, only an implication of it and because he thinks that the intention of the proof is more ambitious than I think it is he must conclude that it leaves business unfinished. I agree with Kitcher that the Analytic leaves important questions unanswered. One might say that it deals with the theory of knowledge only while leaving the theory of science unaddressed. But I do not think that Kant wants to justify our imputation of objective causal necessities in the Appendix and in the two Introductions to the Critique of Judgement. Rather, I think he does not do so any more there than in the Second Analogy. That special causal laws

⁹⁷ *ibid.*, p. 220.

⁹⁸ Thus Kitcher gives the Second Analogy a stronger reading than his mentor Buchdahl. He acknowledges his indebtedness to Buchdahl in a long footnote on page 205.

exist seems instead to have been a basic assumption he never questioned and which informs his whole epistemology.

Like Buchdahl, Kitcher seems to think that causality is “injected by reason”.⁹⁹ Against this interpretation I think that the systematicity demanded by reason is merely a criterion of empirical truth: the *ratio cognoscendi* of empirical laws, so to speak. The category of causality is used to understand concrete events. What *counts* as an empirical law in our knowledge may depend on its place in a system of other such laws.¹⁰⁰ However, in my view, for Kant, the necessity of empirical laws is not bestowed by reason’s search for a system, but only recognized. Talk about “bestowing” necessity gives priority to the a priori forms, whereas in Kant, as I read him, these forms depend, in order to become what they are “meant to be”, if such teleological language be allowed, on their material content.

2. *The accruing of necessity to lawlike statements.* According to Kitcher’s interpretation, necessity “accrues to lawlike statements in virtue of their incorporation in a system that is constructed by following certain rules.”¹⁰¹ I find this claim particularly implausible for it seems to imply that there can be “degrees of necessity”, whereas it would seem that something is either necessary or not. For something to be “more or less necessary” seems to me to be an oxymoron, because the concept of necessity, like that of certainty, seems to allow no room for degrees (although colloquially we say that we are “fairly certain”). I think this supports the view that systematicity can only bestow the character of law for our recognition, not the physical necessity that turns a regularity of nature into an empirical law. Thus Kitcher’s reading turns Kant into more of an idealist than I think he is. To see physical necessity – as opposed to *our readiness* to regard an empirical law as necessary – as accruing to statements seems to idealistically ground the order of being in the order of knowing, which I think Kant did not do. To speak of the “accruing” of necessity is yet a further variation of the metaphor expressed via the images of the infusion, injection, imputation or imposition of necessity which we encountered in the discussion of the secondary literature on the Second Analogy. The idea of an accruing of necessity also informs Kitcher’s phrase that counterfactual-sustaining force is a matter of “endowment”.¹⁰²

99 Buchdahl 1967, p. 214.

100 This is not generally true for all the laws of nature, however. There are laws of nature that are so abstract that they do not involve empirical concepts, for example the laws of thermodynamics on the preservation of energy. Another case in point would be Newton’s third law of motion, i.e. the law of reciprocal action.

101 Kitcher 1972, p. 209.

102 Kitcher 1972, p. 221.

When discussing his suggested reformulation of the first of the three Kantian claims set out above, Kitcher suggests that Kant's first claim should be interpreted as follows: a law is rationally accepted as a law of nature if it is a statement that plays the role of a law in an ideal systematization of our beliefs. He then makes the very important observation that this formula does not tell us *what* laws are.¹⁰³ While Kitcher thinks that he can give us an exhaustive analysis of what natural necessity in Kantian terms is, I think it is crucial to notice that Kant himself does not try to provide such an analysis. On the contrary, he does not say what laws are. According to Kant we do not really understand physical necessity. We understand it only analogically, not intuitively, which is, it is important to stress, in some way only a pejorative way of understanding. Thus, unlike Kitcher, Kant does not contend that there is nothing more to say about physical necessity than what is relevant in the context of the systematization of our empirical knowledge.

For Kant there is something "irrational" about the special laws of nature that is entirely beyond the mind and its powers of imposition, injection, infusion, endowment or whatever similar metaphor implying the imparting of form on plastic material one may use. Having clarified the difference between the formal and material conditions for the possibility of empirical laws of nature in the Second Introduction to the Third Critique, Kant points out that the many special laws of nature must have their own specific necessity. He then makes the crucial claim that "owing to the constitution and limitations of our faculties of cognition we entirely fail to understand this necessity."¹⁰⁴ A few lines on he says that the necessity of nature's special laws is "unfathomable"¹⁰⁵ for us. This suggests to me that Kant does not offer us a reductionist analysis of natural necessity. Rather, we can see from these two passages that, for him, it is an irreducible fact that allows for no further elucidation.

However, Kant does maintain that unless we had a pure understanding we could not come to know the special laws of nature. But it seems to me that there is no way in which their character as laws owes anything to our minds. Thus, that the special laws of nature "stand under" the pure laws¹⁰⁶ of the understanding must, in my view, not be understood in such a way that the lawlike character of the special physical laws "trickles down" to them, so to speak, from the metaphysical laws of the pure understanding¹⁰⁷. As I read Kant, it is wrongheaded to ascribe to him the view that the empirical laws

103 *ibid.*, 210.

104 *CoJ*, second introduction, BXXXIII.

105 *ibid.*, B XXXIV.

106 *Critique of Pure Reason*, B 165.

107 In chapter one we saw that this is Friedman's view.

somehow acquire necessity from the transcendental self, be this through the Principle of Causality or the Principle of Reason or Judgement. We saw that in both these cases the opposite dependency also exists for Kant. First, he maintains that we “meet” with empirical laws in experience.¹⁰⁸ This description would seem to be incompatible with any interpretation that defends the claim that these laws are ultimately in some way of our own making. Moreover, that the proof of the Second Analogy presupposes the mind-independent existence of special necessary laws seems also to be implied by Kant’s statement that the Principle of Causality “has the peculiar character that it makes possible the very experience which is its own ground of proof, and that in this experience it must always itself be presupposed.”¹⁰⁹ That the principle presupposes what it makes possible as its own ground of proof points to a relationship not of one-sided dependency but of mutual implication. Second, Kant says, as already observed, that we would have no reason were it not for an objective order of nature:

“...we cannot make use of the knowledge of nature in any serviceable manner in the building up of knowledge, unless *nature has itself shown unity of design*. For without this unity we should ourselves have no reason, inasmuch as there would be no school for reason, and no fertilisation through objects such as might afford materials for the necessary concepts...” (B 845, italics added)

What Kant says in a similarly objectivist important parallel passage from the A deduction about empirical imagination, that it must “find opportunity for exercise appropriate to its powers” (A 100) thus also applies to the faculty of reason.

3. *Epistemological luck and the element of contingency in understanding*. In his effort to develop what Kitcher sees as Kant’s middle position between the realist and anti-realist Machians and Duhemians he maintains that Kant would have to regard the claim that nature is systematic as either misleading or senseless.¹¹⁰ He thinks that, for Kant, the rationality of our preference between different theories could not depend on contingent facts about the world because in this way the connection between our theoretical understanding and our success in finding unified accounts of natural phenomena would also be merely contingent. It would be a matter of luck. Kitcher rejects this as a position that describes Kant’s views because it presupposes a correspondence theory of truth which, according to Kitcher, could not be entertained by Kant. Two things need to be said about this. First, Kitcher takes insufficient account of a central passage of the Second Introduction where Kant expressly says that knowledge has to do with luck:

108 The categories only enable us to apprehend dynamical connections, i.e. empirical laws of nature, “when met with in experience” (CopR, B 798).

109 CopR, B 765.

110 Kitcher 1972, p. 211f.

Now this transcendental concept of a finality of nature ... attributes nothing at all to ... nature, but only represents the unique mode in which we must reflect upon the objects of nature with a view to getting a thoroughly interconnected whole of experience, and so is a subjective principle ...of judgement. For this reason, too, just as if it were *a lucky chance that favoured us*, we are rejoiced ... where we meet with such systematic unity under merely empirical laws.¹¹¹

It seems to me that this passage confirms as Kant's view what Kitcher thinks a Kantian conception of science could not entail. Second, it seems to me that Kitcher rules out all correspondence aspects from Kant's theory of truth too quickly. When Kant says that we cannot compare our judgements with their object but only with further judgements,¹¹² this certainly shows that there is a strong consistency element in his theory of truth.¹¹³ However, I think it would be a simplification to claim that Kant has a correspondence theory of truth and that there is nothing more to say about this question. I think there is also a correspondence element in Kant epistemology, in the sense that only the whole coherent system of our knowledge can correspond to the way the world is. It seems to me that a coherence and a correspondence theory of truth need not be mutually exclusive, i.e. it is possible to see coherence as a condition for correspondence and as neither a guarantee nor a replacement for it. The systematic unity would then be relevant for knowledge because the nature of the object demands it. It would undoubtedly be too simple to naively talk about "the way the world is" because, for Kant, it is a world of appearances rather than things in themselves. Yet when Kant talks about the supersensible substrate of nature gaining intelligibility through our capacity to judge,¹¹⁴ I take him to be making a realist point. There is a substrate of nature which grounds the empirical laws that determine the way the empirical world is. Thus it becomes thinkable that "the way the world is" may not be describable in terms of the ultimate *things* it is made up of, i.e. atoms, subatomic particles, e.g. superstrings or whatever theoretical physics or speculative cosmology are going to suggest next, but by the complete ensemble of the *laws* that determine the manifestation of the forces of nature, because Kant defines matter as "force in space", as we will see in the next chapter. These laws would be more fundamental than the things they govern.¹¹⁵ However, this topic cannot be pursued any further at this point. It relates to questions I shall return to in the last chapter.

111 Second introduction to the *Critique of Judgement*, B XXXIV; italics added.

112 See A 104.

113 See also: "The empirical truth of appearances in space and time is, however, sufficiently secured; it is adequately distinguished from dreams, if both cohere truly and completely in one experience, in accordance with empirical laws." (B 521).

114 *Cof*, B LVI.

115 As in Swinburne's theistic metaphysics which sees the laws of nature as divine laws. Such a view of the world, while not one of a finite number of ready-made ultimate constituents, could nevertheless be one in which our apprehension is "bound down". See Swinburne 2006.

4. *The equal importance of the demands for explanation and truth.* I can be quite brief about my final point because it is closely related to the three discussed above. It too questions Kitcher's ascription to Kant of what I think is an exaggeratedly idealist view. By regarding the demands for explanation and truth as coequal in importance Kitcher rules out what Kant seems to allow, i.e. that the truth about some aspects or regions of nature could be that they defy our efforts to explain them. The truth we obtain at the ideal limit of inquiry could fail to be fully systematic. Kant's epistemology appears to me to leave room for that. In Kitcher's reading it does not. However, in a Kantian theory of science, finding truth can make sense apart from finding a unified system. I think that Kant allows for nature to be potentially recalcitrant¹¹⁶ and that he is to that extent more of a realist than Kitcher thinks, i.e. our epistemic situation in the world could be an unlucky one.

4.6. The methodological interpretation: Allison

As in the case of Kitcher, I think that the interpretation Allison *actually* provides of the principle of judgement is weaker than the one he *thinks* he is defending. For this reason I have also classified his reading of the Principle of Judgement as methodological. In the following outline of Allison's interpretation of the Principle of Judgement I will mainly¹¹⁷ concentrate on the way he summarizes his views in the final section of the first chapter of his *Kant's Theory of Taste*.

Allison begins his exposition by referring to the much-quoted passage from section V of the Second Introduction to the Critique of Judgement, in which Kant considers the possibility that despite the uniformity of nature under the universal laws that issue from the pure understanding, "the specific variety of the empirical laws of nature, with their effects, might still be so great as to make it impossible for our understanding to

116 See Kant's definition of an object in the deduction: "Now we find that our thought of the relation of all knowledge to its object carries with it an element of necessity; the object is viewed as that which is against our modes of knowledge being haphazard or arbitrary, and which determines them *a priori* in some definite fashion." (A 104) The recalcitrance of what is objective can be captured in German by the word play: *Ohne Widerstand keine Gegenstand*. The meaning of the Latin prefix "ob" is "against". The word "objectum", i.e. that which is thrown against us, captures this sense of recalcitrance well. That objectivity and the necessity which grounds it are no constructs of the mind for Kant can also be seen clearly in the following passage from a letter he wrote to his student and friend Marcus Herz: "However, our understanding is through its representations neither the cause of the object ... nor is the object the cause of the representations of the understanding (in sensu reali). The pure concepts of the understanding must therefore neither be abstracted from the impressions of the senses nor express the receptivity for sensual impressions, but they must have their source in the nature of the soul, yet not in so far as they are caused by the object, *nor in so far as they themselves produce this object.*" (Letter to Herz from 21st February 1772) (italics added).

117 I will also look at three additional papers in which Allison articulates and defends his reading. I thank Dr Lilian Alweiss for drawing my attention to two of these.

discover in nature an intelligible order.”¹¹⁸ Allison finds the problem raised by this passage reminiscent of, although significantly different to, the passage at B 123 preceding the transcendental deduction of the categories where Kant contemplates the real possibility that “appearances might very well be so constituted that the understanding should not find them to be in accordance with the conditions of its unity.” Both of these epistemological horror scenarios (which we came across earlier) raise a particular spectre: the former of disorder at the transcendental and the latter of disorder at the empirical level. The aim of the transcendental deduction of the categories for Allison is “to exorcise this spectre”¹¹⁹ at the transcendental level. According to Allison’s interpretation, the deduction succeeds in dealing with this spectre by showing that it sets out to imagine a situation that could not be experienced at all because it is not compatible with the conditions of the unity of the apperception.

However, the thought experiment which envisages disorder at the empirical level imagines a scenario that cannot be dealt with in this way. The problem of a potential empirical chaos cannot be solved because:

the possibility of empirical chaos or lack of sufficient uniformity is not precluded by these [transcendental] laws, which ensure, for example, that nothing happens without a cause, but not that these causes are discoverable on the basis of empirical regularities.¹²⁰

Thus the order at the transcendental level does not simply translate into a uniformity at the empirical level. This is because there is an “unavoidable element of contingency in the fit”¹²¹ between the universal laws issuing from the pure understanding and the particular objects and events encountered in our experience of the empirical world. The same contingency also applies between the levels of abstraction between different empirical concepts and laws. According to Allison Kant requires and provides a distinct transcendental principle to deal with this spectre of empirical chaos, i.e. the Principle of Judgement. However this principle cannot succeed in ruling out the possibility of an empirical chaos in the same way in which the deduction of the categories ruled out the spectre of the possibility of a transcendental chaos, because an objective deduction of this kind is impossible. There is, however, room for a subjective deduction. Its modest goal is to render the spectre of an empirical chaos “idle”.¹²² The Principle of Judgement cannot establish that nature in her empirical detail is systematic, it can only show that

118 CoJ, B XXXVII.

119 Allison 2001b, p. 38.

120 *ibid.* Text in brackets added.

121 *ibid.*

122 Allison 2001b, p. 39.

“we are rationally constrained to approach nature *as if* it were so ordered.”¹²³ Kant calls this principle “heautonomous”, which Allison translates by saying that it is “both the *source* and *referent* of its own normativity”.¹²⁴

Allison contends further that the deduction of the Principle of Judgement offers the key to understanding Kant’s answer to Hume. Whereas the latter had explained our commitment to the belief that regularities experienced in the future will be of the kind experienced in the past by reference to mere custom or habit, Kant’s deduction provides this principle with a rational justification. Moreover, according to Allison, the Principle of Judgement also represents the third way between Locke’s nominalism and Leibniz’s metaphysical commitment to real essences that Kant was looking for. I will have more to say about this claim and the other claims made by Allison in the next section in which I want to reply to Allison’s interpretation.

4.7. Reply to the methodological interpretation: Allison

I would like to begin my comments by assessing Allison’s claim that the Second Analogy “of itself entails that there must be causal laws of some sort (although not necessarily laws we can determine)”.¹²⁵ I can deal with this rather briefly because in chapter one I already examined and rejected Allison’s case for the weak interpretation of the Second Analogy. By saying that causal laws have to be of some “sort”, in my view, Allison in effect concedes that causal laws can only exist if the principle of judgement has some degree of manifestation in empirical reality, i.e. that the transcendental level essentially depends on the empirical level. He also seems to acknowledge this when he approvingly quotes Hanna Ginsberg’s claim that determinate empirical concepts presuppose causal laws because the intrinsic features by which we systematize things must include causal properties.¹²⁶ Because this is so I think it is a mistake to assume that the two spectres outlined above are significantly different. The transcendental spectre can be ruled out only if the empirical spectre can also be ruled out. However, the empirical spectre is unexorcisable, from which it follows that the transcendental spectre cannot be exorcised either. Moreover, Allison’s view that we know on a priori grounds that there are causal laws beyond the laws we know and may yet get to know is equivalent to the claim that

123 Allison 2001b, p. 39. Italics in the original.

124 Allison 2001b, p. 41. Italics in the original.

125 Allison 2003, p. 177.

126 Allison 2001b, p. 31 See also his question as to how one could “apply the concept of causality to a given occurrence unless it were already conceived as an event of a certain kind, for example, the freezing of water?” Allison 2001b, p. 24. The question alludes to Kant’s example in the First Critique at B 162.

there could be laws governing aspects of the empirical world which we are, in principle, unable ever to get to know. This seems to conflict with what Kant's says about transcendental laws generally:

Experience depends, therefore, upon *a priori* principles of its form, that is, upon universal rules of unity in the synthesis of appearances. Their objective reality, as necessary conditions of experience, and indeed of its very possibility, can always be shown in experience. Apart from this relation synthetic *a priori* principles are completely impossible. (B 195)

Whereas for Kant the causal principle is clearly tied to possible experience, as this quotation shows, Allison's way of reading it seems to sever this essential link to possible experience.

It may help to clarify the difference between my own and Allison's interpretation by expressing it in logical symbolism. If it is stipulated that C = the principle of causality applies to the empirical world, R = there are regularities in the empirical world, and TS = the world contains transcendental subjects (discursive, finite minds), Allison's interpretation can be stated in the following way:

$$(1) \neg \Box[(TS \wedge C) \rightarrow R] \text{ or } (2) \Diamond(TS \wedge C \wedge \neg R)$$

Allison claims that the spectre of an empirical chaos does not affect the applicability of the causal principle. Contrary to this reading, my own view can be formalized in the following way:

$$(3) \neg \Diamond(TS \wedge C \wedge \neg R)$$

For the causal principle to be applicable there must be a limited degree of systematicity or regularity. The horror scenarios Kant paints make the following claim:

$$(4) \Box[(\neg C \wedge \neg R) \rightarrow \neg TS]$$

But the world Kant thinks we may actually be living in leaves open the following possibility:

$$(5) \Diamond(TS \wedge C_L \wedge R_L)$$

where C_L and R_L stand for a limited applicability of the principle of causality due to only a limited manifestation of regularity.

I would like to make just one comment on Allison's assurance that the spectre of an empirical chaos is "idle". Predictably, I disagree with him. Thus when Kant says that "we should at once acquiesce"¹²⁷ if we are told that a deeper investigation into nature would reveal a complexity that we could not possibly deduce from empirical laws, I do not think he only considers the limited spectre of an empirical chaos by assuming, as Allison

¹²⁷ *CoJ*, B XLI.

does, that we can know that there are laws for everything that happens, just that we may on some occasions unfortunately fail to find them. I think that what Kant is contemplating here is the possibility that aspects of nature might be *genuinely* elusive, not just for us, i.e. we can not be sure on a priori grounds that there are laws that govern all appearances and that it is only a regrettable, contingent accident that they elude us in some cases. Against such a view I would maintain that the spectre is real. I think that Kant is very much alive to the possibility that it could be the case that laws do not exist for certain phenomena which would then be not just unintelligible for us, but essentially “opaque”, as it were. According to Allison’s reading of the Second Analogy it proves the intelligibility in principle of the whole of the empirical world. The spectre of an empirical chaos is for Allison only a consequence of the finitude of our minds, not of the way we may find the world to be in some of its aspects. Now, Kant may well have *believed* personally¹²⁸ that all phenomena of the empirical world are accessible to explanatory knowledge, but I do not think he thought we can *know* that this is so. The “joy”¹²⁹ of the scientist who has succeeded in finding empirical laws is, in my view, more like that of a person who has recovered from an illness that was potentially fatal than that of a person who has recovered, albeit with the greatest possible patience, from a disease nobody has ever died of.

Finally, I would like to examine Allison’s claim that the deduction of the Principle of Judgement is Kant’s “third way” between Locke’s nominalism and Leibniz’ defence of real essences. Following Longuenesse in this respect Allison brings out the specific nature of Kant’s position by comparing it to that of Locke. Whereas Locke maintained that “general and universal belong not to the real existence of things, but are the inventions and creations of the understanding made for its own use”,¹³⁰ Kant, according to Allison, claims that the empirical concepts we arrive at through our logical operations “somehow reflect or correspond to the nature of things.”¹³¹ The position of Locke is characterized by a sharp contrast between real and nominal essence.¹³² Whereas the real essence refers to the internal structure of things the nominal essence is a product of the understanding. While nominal essences are based on observed resemblances Locke rejects the idea that they correspond to the real essences of things. Locke thus rejects natural kinds “and the

128 Compare his comment on merely statistical laws at the beginning of the dialectic (B 349).

129 See the *Critique of Judgement*, B XXXIX: “...we rejoice (actually we are relieved of a want), when, just as it were a lucky chance furthering our aim, we do find systematic ... unity among merely empirical laws”.

130 Locke 1980, p. 267.

131 Allison 2001a, p. 29.

132 My account of the contrast between Locke and Leibniz follows Allison 2001a, p. 288f.

whole allegedly disreputable Aristotelian-Scholastic scheme of explanation"¹³³ that is part of it. Against this nominalism Leibniz maintained that "generality consists in the resemblance of singular things to one another, and this resemblance is a reality."¹³⁴ Leibniz further contends against Locke that the outer appearance of things is grounded in their inner constitution and "that whatever we truthfully distinguish and compare is also distinguished or made alike by nature."¹³⁵ To demonstrate Kant's proximity to Leibniz on this point, Allison quotes a passage from the First Introduction to the third Critique in which Kant makes the following comment on Linné:

One may wonder whether Linnaeus could have hoped to design a system of nature if he had to worry that a stone which he found, and which he called granite, might differ in its inner character from any other stone even if it looked the same, so that all he could ever hope to find would be single things – isolated, as it were, for the understanding – but never a class of them that could be brought under concepts of genus and species.¹³⁶

Allison finishes his discussion of Kant's position between Locke and Leibniz by maintaining that Kant can claim with Locke that the concepts we use to describe the empirical world are of our own making, while at the same time agreeing with Leibniz that the outer appearances of things are grounded in their inner constitution, although they "cannot be assigned any ontological significance (even with regard to phenomena)."¹³⁷ What are we to make of these claims?

First, the text on Linné is indeed highly significant as it goes beyond the mere discussion of abstract principles and emphasizes instead that the empirical world must be a certain way to make knowledge possible and Allison is therefore right to draw our attention to it.¹³⁸ However, I think he should have asked the further question as to what must be the case if the demand the Principle of Judgement makes is to be met. If he had asked this question he would have seen that this passage makes a deeper point than he thinks, for it says clearly that in order to exorcise the spectre of empirical chaos we need more than just another transcendental *principle*. What we need to exorcise this spectre is a *world* that is structured in the way this principle says it must be structured for knowledge to be possible. Thus, for Kant, a material condition, i.e. the way the empirical world is in its unanticipatable contingency, is part of the full account of the conditions

133 *ibid.*

134 Leibniz 1990, livre III, chap. III, sect 9, § 12: "Car la généralité consiste dans la ressemblance des choses singulière entre elles, et cette ressemblance et une réalité." (p. 227)

135 *ibid.*: "Nous pouvons donc dire que tout ce que nous distinguons ou comparons avec vérité, la nature le distingue ou le fait convenir aussi, quoiqu'elle ait des distinctions et des comparaisons que nous savons point et qui peuvent être meilleures que les nôtres." (p. 241)

136 Pluhar 1987, p. 403.

137 Allison 2001b, p. 42.

138 Allison seems interested in this text mainly because it nicely agrees with Leibniz' point against Locke.

for the possibility of empirical knowledge. To elaborate on the Linné example: the science of mineralogy is possible only because there is a region of empirical reality that consists of things that are structured and which change in ways we can comprehend. Their physical and chemical features, i.e. their crystal structure, their composition, the optical phenomena associated with them, e.g. their translucence, fluorescence, luminescence etc., and their countless other features which are known only to experts in this field of knowledge, are such that they make it possible to find a taxonomic system for them.¹³⁹

Second, I do not think that Allison describes Kant's position between Leibniz and Locke correctly. Thus, when he claims that our empirical concepts "cannot be assigned any ontological significance (even with regard to phenomena)" one wonders: what kind of significance is left for them? For what could the significance of our conceptual scheme possibly be, if it cannot even be assigned a significance for phenomena (as opposed to things in themselves)? As phenomena are not things in themselves our empirical concepts have no ontological status in that strong sense. However, it seems to me that an "ontology of phenomena" or what one might call an "immanent metaphysics", i.e. one that describes essential features of appearances,¹⁴⁰ cannot be ruled out for Kant without at the same time denying *all* significance of empirical concepts in Kant's epistemology. Against the background of this reading it also seems impossible to make sense of Kant's agreement with Leibniz against Locke that we are entitled to presuppose that "every outer appearance is grounded in the inner constitution".¹⁴¹ If our empirical concepts have not even a (limited) ontological significance for phenomena, why should we postulate any grounding for them at all? What explanations could postulating such a grounding possibly provide?

Against this ultimately nominalist interpretation of Allison I would contend that Kant's empirical realism is robust enough to allow for genuinely universal features of the empirical world. We could not arrive at empirical concepts if the empirical world did not display universal features. The case seems to me to be analogous to that of the Second

139 The fact that our knowledge of the chemical elements can be systematized in the table of the chemical elements is in a sense analogous to the morphology of kinds of animals. While these laws of copresence (cf. Swinburne's distinction between regularities of copresence or spatial order and those of succession, in: Swinburne 1968, p. 200) allow the biologist to predict, for example, that a vertebrate with a heart will also have kidneys, the chemical table allows the chemist to predict certain characteristics if she is told that a substance is a metal.

140 For example in the way Beatrice Longuenesse tries to argue for the Second Analogy as an ontological principle of appearances.

141 Allison 2001a, p. 42.

Analogy of Experience which, I argued, depends on the contingent existence of empirical laws for its applicability. Likewise, the Principle of Judgement would cease to be of any relevance if the empirical world were not systematic *to some extent*. One can agree with Allison that Kant cannot ground these resemblances in the same way as Leibniz. But that does not mean that there is no way for him to do so. Kant nowhere elaborates *how* the empirical laws are grounded, but he does say that they do have a ground. In § 80 of the Critique of Judgement, where he deals with the relationship between teleological and mechanical explanations, we find a most important passage that throws a clarifying light on our problem. In this text Kant argues that one should try to explain the products of nature as far as this is possible in mechanical terms. If the attempt to do so is given up, this should not be because such explanations are impossible in themselves but only because it is humanly impossible to give them. He then provides the reason why it is impossible for us to arrive at such an explanation:

For there would be required for that an intuition other than sensuous, and a determinate knowledge of the intelligible substrate of nature from which a ground could be assigned for the mechanism of phenomena according to particular laws, which quite surpasses our faculties.¹⁴²

Here Kant says that if, *per impossibile*, we could obtain knowledge of the intelligible substrate of nature, we would be in a position to give an account or explanation for the particular laws of nature. Thus while there is a ground for the empirical laws, it is beyond our capacity to understand *how* it grounds the empirical lawfulness of nature. Notwithstanding our ignorance in this regard, I think that this grounding of the lawfulness of the empirical world licenses talk of intrinsic features of appearances which could stand in for Leibniz's real essences and do their work, so to speak.

Thus how *should* we characterize Kant's position between Locke's nominalism and Leibniz' realism? Clearly, Kant can not adopt a merely nominalist position because the formal conditions for the possibility of knowledge need a determinate, even systematic material complement to make knowledge possible. Experience of the empirical world can only result in true empirical judgements if the distinctions our empirical concepts introduce among the things of the world are objectively grounded in some way. Some degree of objectivity must therefore be allocated to our empirical concepts.¹⁴³ However it seems that Kant cannot be a realist with regard to universals either. Only a trans-

¹⁴² *CoJ*, B 367.

¹⁴³ However, note that Kant says that empirical judgements can only make a "claim" to be true: "But the judgement of taste also *claims*, as every other empirical judgement does, to be valid for every one; and in spite of its inner contingency this is always possible." *CoJ*, B XLVI, (original without italics)

cedential realist like Leibniz could be a realist with regard to essences. Since for Kant the regularities grasp intrinsic features of appearances only, he cannot be a Platonist. For the essential features of our world of appearances may not be “real” essences from the point of the substrate that underlies these appearances and which is inaccessible to us.¹⁴⁴ However, this leaves the position of an immanent essentialism open. While our experience is limited to appearances these can be regarded on the empirical level as though they were things in themselves, and we can say that, while not transcendentally real, the empirical world stands in for the transcendentally real world and does its work. I will have more to say about this topic in the last chapter. Thus Kant seems to be committed to what one might in his terms call an “as-if” Aristotelianism.

One could say that according to Kant our empirical judgements are the products of a guided creativity. We are, on the one hand, bound down by the material content of experience, but, on the other hand, free in the way in which we conceptualize this content. Our knowledge is not the effect of the objects on us.¹⁴⁵ Changes in the way we conceptualize the world do not only result from scientific advances, but also from changes in our thinking, for example, when we hope to deepen our understanding by adopting new theories.¹⁴⁶

To conclude: in the final analysis, Allison’s interpretation is merely heuristic. Although he quotes the crucial passage on Linné it seems to me that he does not appreciate its full importance. He does not spell out the requirement that the Principle of Judgement has to have a material manifestation, i.e. he does not explain what this amounts to in detail. Similar to his interpretation of the Second Analogy, which I argued was ultimately subjectivist, by emphasizing only the heautonomy of the Principle of Judgement, i.e. the fact that it is both the source and referent of its own normativity, this reading restricts itself to the subjective side and fails, in my view, to give due recognition to the objective side of this principle. Thus by emphasizing this subjective aspect at the expense of the object-directed import of the principle Allison positions Kant much closer to Locke than I think he should be.

144 As in the proviso that the wisdom of the world might be folly in the eyes of God.

145 In ancient philosophy this was assumed by Epicurus. He thought that the objects constantly gave off tiny images of themselves (*εἰδωλα*) that strike our retina and thus cause our knowledge of them. This image assumes that the relationship between empirical reality and empirical thought is causal. For Kant, however, it is not causal but representational. See Epicurus, pp. 11-17.

146 See Dummett 2006, p. 92.

5. Conclusion

Finally, I wish to recapitulate briefly how I think that this chapter has contributed to the defence of the NPT. I began by distinguishing three rival interpretations of the Principle of Judgement: an objectivist, a methodological and a compatibilist reading. I then offered a close reading of the crucial texts from the Third Critique in which Kant develops his views on systematicity. Having examined and rejected Guyer's claim that there is a radical shift in Kant's epistemological views between the First and the Third Critique, I turned to the analysis and assessment of the objectivist interpretation of Abela and the methodological interpretations of Kitcher and Allison. I rejected these rival interpretations for failing to do justice to the full textual evidence concerning Kant's views on systematicity. It has been argued in this chapter that Kant's empirical realism has room for the possibility that aspects of the world might not only be elusive but even essentially unintelligible.

The compatibilist reading defended in this chapter is implied by the central claim of the No-Priority thesis which maintains that there exists in Kant's epistemology an essential interdependence between the formal and material conditions for the possibility of knowledge. The compatibilist interpretation defended in this chapter can make more sense of the seemingly conflicting passages we find in Kant's texts dealing with the subject of systematicity than its rivals. If, according to Kant, we have to consider formal as well as material conditions for the possibility of empirical knowledge then this is exactly what one would expect to find, i.e. we can expect Kant to emphasize both the formal and the material aspect of the principle of systematicity. The claim that these two aspects are distinguishable, yet essentially interdependent and of equal weight, is supported by the fact that Kant emphasizes them to such an equal extent, that commentators have been led to think that he is oscillating between two contradictory interpretations of the principle and that his statements overdetermine a stable interpretation. By contrast, the interpretation advocated in this chapter can integrate these seemingly contradictory claims and it can deny at the same time that they must be seen as ineliminably opposed, because we can say both that (1) a question can be a guide to finding the right answer to a problem only if it has a logic that is to some extent immanent to the objects it is addressed to and that (2) it is not necessary to assume systematicity as a general principle of the way in which every aspect of the empirical world is structured to meet the requirement of (1). All that is required is some limited degree of systematicity. Where such contingent and unanticipatable systematic order is *de facto* manifested, our understanding can find a foothold in the empirical world.

Chapter 4

Kant's Concepts of Matter

Neither the *transcendental object* which underlies outer appearances nor that which underlies inner intuition, is in itself either matter or a thinking being, but a ground (to us unknown) of the appearances which supply to us the empirical concept of the former as well as of the latter mode of existence.

CopR, A 380

The truth about matter must be strange.

Bertrand Russell

1. Introduction

In this penultimate chapter I would like to examine whether the result of the investigations carried out in the previous chapters can be corroborated in a further important area of Kant's epistemology, i.e. in the context of Kant's theory of matter. As in the previous chapters my goal cannot possibly be a comprehensive exposition and assessment of this complex and difficult theory. Instead, as before, I shall engage with Kant's claims and arguments in this area only to the extent required to advance my argument for the central thesis of this dissertation by gathering additional evidence in support of it. It will be seen from the following that the interpretation of Kant's theory of matter raises a number of difficult questions of interpretation, which are directly relevant to my central concern regarding the relationship between the formal transcendental and the material empirical levels in Kant's epistemology. My main aim in this chapter will thus be the following: to pursue the question as to how the No-Priority thesis manifests itself in this context.

Kant develops his theory of matter in the *Metaphysical Foundations of Natural Science* which he published one year before the Second Edition of the Critique of Pure Reason and four years before the Critique of Judgement. In this chapter I shall argue for a particular interpretation of Kant's matter theory which I am committed to by my No-priority thesis. I shall defend this interpretation against rival views that challenge it. As forms of idealism are often contrasted with those of materialism, the investigation into the status of the concept of matter in Kant's epistemology will also serve an important secondary aim: it will prepare the discussion of the way my thesis, if accepted, should inform the way we understand Kant's central doctrine of Transcendental Idealism. This will be the task of the next chapter, the fifth and final one.

The correct interpretation of Kant's theory of matter is as controversial as that of the Second Analogy and of Kant's views on systematicity examined and discussed in the previous three chapters. The expectation we might have, i.e. that it is possible to categorize the disagreement of critics along, by now, familiar lines or that it is possible to distinguish between a strong and a weak interpretation of Kant's theory of matter, will not be disappointed. These three interpretations can be set out in the following way:

Strong interpretation: Essential features of matter can be established by a priori reasoning prior to any attempt to understand matter through scientific research. Typically, advocates of this reading maintain that there is a one-sided dependency of the *MFNS* on the Critique of pure Reason.

Weak interpretation: This interpretation contends that Kant does not show what matter *is* but rather as what it must be *conceived iff* we want to enter into a scientific investigation of its features. Critics defending this view claim that the relationship between the *MFNS* and the Critique of pure Reason is less than a deduction of the claims of the former from the results of the latter. They see a certain "looseness of fit", to use the much-quoted phrase of Buchdahl, who is the main advocate of this reading.

Mixed interpretation: In contrast to the weak interpretation, while it agrees with the weak interpretation's challenge of the strong interpretation's view, i.e. its claim that Kant does not provide an a priori deduction of the essential elements of the empirical or scientific concept of matter, the mixed interpretation I shall defend in this chapter nevertheless maintains that the applicability of the concept of matter depends on the contingent and unanticipatable fact that there are objects in the empirical world which allow the use of this metaphysical concept. The mixed interpretation thus tries to chart a middle course between the strong and weak interpretations.

These preliminary characterizations call for clarification and contextualization. I shall provide these in the next section. A more comprehensive account of the three interpretations of Kant's theory of matter I characterized above will emerge in the close reading and assessment of three critics.

To conclude this introduction, I would like to provide a brief overview of this chapter and to anticipate its result: After these (1) introductory remarks I shall (2) clarify and contextualize the three rival interpretations distinguished above. I will then (3) engage in a close reading of the preface of the *MFNS*. I shall end this section with a summary of the main findings of that exegesis. To reach a clearer understanding of the

relationship between the empirical and the transcendental aspect of the concept of matter, the next section will (4) examine at some length what Kant says about the definition of concepts generally. Addressing this question will augment the rather brief and unusually condensed argument Kant provides in the preface to the *MFNS*. It will also broaden the textual basis for the engagement with the critics to be undertaken subsequently. Moreover, discussing this question will also afford an opportunity to explore an additional important aspect of Kant's theory of knowledge which has helped me to clarify my interpretation of Kant's difficult theory of matter. After this preparatory work I shall briefly summarize my own interpretation of Kant's theory of matter before I turn to the largest section of this chapter: the (5) exposition and critical assessment of three rival interpretations of Kant's matter theory. In this section I shall look at the readings advocated by Plaass, Friedman and Buchdahl. The concluding section will (6) summarize the result of this chapter and state the way in which it supports the central thesis of this dissertation.

2. Clarification and contextualisation of three rival interpretations

Before I turn to the analysis of the preface of the *MFNS* in the next section, I shall briefly clarify and contextualize the three rival interpretations distinguished above.

2.1. The strong and weak interpretations of the concept of matter

Advocates of the *strong interpretation* claim that there are essential and thus universal features of matter. According to Plaass, the content of the concept of matter is a priori and only the existence of matter has to be confirmed empirically. For these critics, an example of such an essential feature of matter is its gravity, which they think we can deduce by a priori reasoning alone. This view implies that Kant's metaphysics of corporeal nature is an exercise on a par with theoretical physics.

According to the *weak interpretation* Kant does not develop an account that is on a par with considerations in theoretical physics. This interpretation claims that instead Kant gives a more fundamental, philosophical account of the concept of matter which provides the indispensable conceptual basis for such scientific considerations. For example, in line with such a view Michael Dummett has claimed that the solution to some problems in quantum physics can only and therefore must come from philosophy.¹ Advocates of this interpretation maintain that Kant's arguments do not establish the

1 See Dummett 2001, p. 30.

essence of the matter we encounter in physical experiments and which we assume underlies the material objects of our everyday experience. According to this view it is a mistake to simply identify the empirical and the metaphysical concepts of matter. It must not be assumed that the metaphysical concept has an "isomorphic counterpart" in the empirical world, so to speak. Thus this interpretation is analogous to the heuristic interpretation of Kant's views on systematicity examined in the previous chapter. The weak interpretation can point to some strong evidence. Thus Kant concedes that his theory of matter does not even suffice to explain as basic a feature of material objects as the fact that they cohere. He says that "how rigid bodies are possible ... is still an unsolved problem, in spite of the ease with which ordinary natural science believes itself to dispose of it."² Moreover, with regard to an adequate explanation of how matter and its specific varieties are made possible by those fundamental forces to which Kant thinks we should conceive matter as reducible, he concedes that he is "unable to provide it".³

2.2 The mixed interpretation of the concept of matter

This interpretation is the one I will defend against the two set out above. It agrees with the weak interpretation in one respect: the mixed interpretation also contends that Kant's treatment of the concept of matter provides no a priori insight into the essential constituents of the scientific concept of matter. Yet the mixed interpretation also contradicts the weak interpretation by claiming that, in the same way in which the applicability of the principle of causality depends on the contingent fact that special laws of nature exist, the applicability of the metaphysical concept of matter depends on the unanticipatable fact that there are objects in the empirical world which allow or invite the use of the metaphysical concepts of substance and matter, i.e. substance in space. This interpretation maintains that Kant did not set out to prove by a priori reasoning that *all* phenomena we encounter in the empirical world must permit the application of the concept of matter and will therefore behave like substances. Physical science has found extremely short-lived, ephemeral and unstable forms of matter, which can to that extent be said to be "insubstantial". Therefore, on purely empirical grounds, substantiality as permanence seems not to be a necessary requirement for a physical object to exist. Nothing that according to Kant is knowable a priori about the empirical world could rule out that it could have consisted entirely of such "insubstantial", ephemeral objects (although it could in that case, of course, not have supported the evolution of knowing

2 MFNS, 4:529.

3 See 4:525.

selves that can theorize about them!). The interpretation of the concept of matter I shall defend in this chapter claims that the category of substance and the metaphysical concept of matter based on it cannot rule out a world in which they would be inapplicable. Instead, they depend for their applicability and their realization, i.e. for the fact that this form of thought enables us to gain empirical knowledge, on the existence of a mind-independent empirical world that is structured in such a way that this condition for the possibility of empirical knowledge does in fact meet with an empirical correlate which makes it a form of knowledge.⁴

In an article on Substance published by the *Stanford Encyclopedia of Philosophy*⁵ we find the following claim that would be regarded by many as having a typically Kantian ring to it:

Substances — that is, a framework of stable, enduring objects — are essential, but the source of this necessity lies not in how the world is in itself, but in the framework which we are obliged to impose.

The mixed interpretation to be defended here strongly rejects such a view. Instead, it makes the opposite claim, i.e. that it is a clear implication of Kant's epistemology that only if, and to the contingent extent, that the world contains enduring objects can the concepts of matter and substance find application. The use of these concepts involves no imposition. On the contrary, the application of the concepts of matter and substance would be impossible were it not for the existence of objects which are permanent to some degree as part of the way we have contingently found the empirical world to be, i.e. the mind no more guarantees the substantiality of the *objects* it encounters in space than it injects a causal connection, its own "cement", to quote Mackie, into the *events* of the world.

As already indicated, the claim that, when confronted with a hitherto unknown field of objects and events, we cannot know that the phenomena we encounter will permit the category of substance is similar to parallel points made in connection with the concept of causality in chapter one. Kant's epistemology is frequently thought to have been refuted by the progress of science. A case in point is Cynthia MacDonald's remark that, contrary to Kant's theory of knowledge, developments in quantum mechanics suggest that the principle of causality and the category of causality that it embodies are not indispensable to our thinking about the world as claimed by Kant.⁶ However, when

4 See Kant's reference to the object as that "with respect to which the logical function could be determined to category". This phrase suggests – at least to me – that the object presents some "pressure" which accounts for this determination. In a footnote to § 39 of the Prolegomena Kant points out that the concept of substance underlies all our concepts of real things.

5 Contributed by Howard Robinson and posted in 2004 (<http://plato.stanford.edu/entries/substance>).

6 Cynthia MacDonald, 2005. *Varieties of Things*, p. 13. Oxford.

she believes to come to Kant's defence by pointing out that philosophers should not tie themselves to the claims of a particular scientific theory, in my view, she is merely describing Kant's original position.

It is a widespread view that in the First Critique Kant was trying to do no more than lay the philosophical foundations for Newton's physics, of which he was undoubtedly a great admirer. One might see evidence for this in the fact that the very title of the *MFNS* parallels that of Newton's work, the full title of which is *Philosophia Naturalis Principia Mathematica*.⁷ However, I think that this view is mistaken. First, as we have already seen in chapter one on the Second Analogy, Kant is very careful to limit his argument in the Critique of pure Reason to a transcendental inquiry and he is equally careful to do the same in the *Metaphysical Foundations*. He excludes all empirical principles and repeatedly makes similar provisos. Second, there is clear and uncontrovertible textual evidence for the fact that Kant did not see his own relationship to Newton in quite such ancillary terms. This comes in the form of his criticism of Newton, whom he faults for not daring to provide an a priori proof of the third law of mechanics, i.e. "In all communication of motion, action and reaction are always equal to one another."⁸ The relationship between the *MFNS* and Newton's *Principia* and any other future work of a similar ambition would be more accurately characterized in the way Kant described his view of the relationship between philosophy and theology: as the former shining the light on the path ahead for the latter.⁹ In short: I do not think the *MFNS* were written to provide a philosophical apologia for Newton's *Principia*.

3. The Concept of Matter in the Metaphysical Foundations of Natural Science

To advance the argument in support of the No-Priority thesis, this subsection will highlight the fact that the contribution the concept of matter can make to the understanding of physical objects is crucially qualified by Kant in various ways. This results in a number of provisos which must not be overlooked when it comes to an assessment of Kant's theory of matter. Thus when Strawson criticises Kant for having failed to establish "the necessity of something permanent in the field of experience",¹⁰ he clearly assumes that this is what Kant was trying to do. It will be seen from the following that such a reading

7 In a direct reference to Kant, the contemporary metaphysician E. J. Lowe has chosen *A Metaphysical Foundation of Natural Science* as a subtitle for his work *The Four-category Ontology*.

8 *MFNS*, 4:544.

9 *The Conflict of the Faculties*, A 27.

10 Strawson 2000, p. 275.

is based on an exaggerated view of what the First Analogy of Experience of the First Critique and the exposition of the concept of matter in the *MFNS* are trying to establish. The preface to the *MFNS* is as fundamental in its importance for the overall understanding of Kant's epistemology as the texts selected for close analysis in the previous chapters. It has been chosen for the direct way in which it provides strong support for my central thesis. This is particularly evident in Kant's statement at the end of the preface that the services which the metaphysics of corporeal nature does general metaphysics are "indispensible".¹¹ This again strongly suggests that the dependence between the formal conditions of empirical knowledge and their material counterpart is mutual and essential. It will be seen from the following close reading of this text that Kant's theory of science or, more precisely, his views concerning the relationship between science and the kind of metaphysics that can and – as we will see – must persist in the light of the Critique of pure Reason are quite complex. They are not something one might be able to simply anticipate from the First Critique, although in chapter two on the Appendix to the Transcendental Dialectic we saw that the First Critique addresses and begins to spell out important themes that traditionally belong more to the philosophy of science than the general theory of knowledge, which Kant deals with in the Transcendental Analytic. The result of the Critique of Pure Reason is, of course, presupposed in the *Metaphysical Foundations of Natural Science*,¹² yet the latter augment this result in important ways.

This subsection is structured in the following way. I shall first follow Kant's claims and arguments in the preface to the *MFNS* and try to place them in their wider context as I do this. I will then return to the crucial claims of this text in a separate section and provide some additional clarification.

3.1. The argument of the Preface to the *MFNS*

Kant begins his exposition with a crucially important distinction. He maintains that there is a difference between a merely formal and material sense of the word "nature", a distinction we already came across in the previous chapter. In a definition of the formal sense of the concept of nature, which has a very Aristotelian ring to it, Kant wants it to be understood as "the primal inner principle of all that belongs to the existence of a thing",¹³ where a thing here refers to one of the specifically different kinds of things that

11 *MFNS*, 4:478.

12 Kant published them in 1786, three years after the *Prolegomena* and one year before the Second Edition of the Critique of Pure Reason.

13 *MFNS*, 4:467.

are the objects of the various natural sciences. There can be, according to Kant, as many different sciences as there are different kinds of things. The inner principle of a thing is that to which a particular kind of thing owes "the determinations pertaining to its existence".¹⁴ In a footnote Kant contrasts this definition of the nature of a thing with that of its *essence*, which he defines as "the primal inner principle of all that belongs to the *possibility* of a thing."¹⁵ Kant provides an example for this difference. We will see that it is crucial when it comes to appreciating the import of the analyses in the *MFNS*: he claims that geometrical figures only have an essence and not a nature, because nothing in the concept of such a figure entails its existence. The material sense of the concept nature, on the other hand, does not refer to the special kind of a particular object. Instead, it signifies the "sum total of all things, in so far as they can be *objects of our senses*",¹⁶ i.e. the totality of the objects of our experience. This material nature is divided by Kant in accordance with the two modes of our sensibility into the objects of outer and inner sense so that there are two possible doctrines of nature: one of body and another of soul, i.e. of *extended* and *thinking* nature respectively.

In accordance with his claim, which was examined at length in the previous chapter, that only a systematic doctrine deserves the title of a science, Kant now introduces the first of a number of additional distinctions by differentiating between a mere description of natural phenomena (what would have been and is still called natural history and would have included, for example, the biology of his day) and natural science. Natural science is then further distinguished by Kant into one properly and another improperly so-called, whereby the former comprises a priori principles as a proper part of it, while the latter kind of doctrine relies totally on empirical laws. Kant wants to reserve the title "science" only for knowledge "whose certainty is apodictic",¹⁷ a requirement which obviously cannot be met by a body of knowledge that must rely entirely on empirical laws. As an example of a body of knowledge that entails no apodictic elements Kant mentions chemistry. Kant is here referring to the pre-Stahlian chemistry of his day. He would later revise this assessment.¹⁸ In his view, it does not qualify as a proper science because the principles from which given facts are explained in this field of knowledge are merely empirical and thus non-necessary laws. Thus, for Kant, chemistry can at best be described as "a systematic art".

14 *ibid.*

15 *ibid.*

16 *ibid.*, italics in the original.

17 *ibid.*, 4:468.

18 See Friedman 1992b, chapter 5, section (iii).

Because it is only insofar as it has an a priori apodictic element that a body of knowledge can lay claim to being a proper science, Kant thinks that it is not only desirable, but even obligatory to separate this part of a science from the merely empirical rest of it and to develop it in its completeness. According to Kant, this has the added advantage of letting us see clearly at what point exactly the pure part of a science begins to require the assistance of empirical principles. He then juxtaposes pure philosophy, which he calls metaphysics, and mathematics. Now, it is important to note at this point that this metaphysics is of course of a kind consistent with the result of the First Critique. It is, according to Kant, “drawn from the essence of the faculty of thinking itself”.¹⁹ Whereas mathematics bases its knowledge on the construction of its concepts in a priori intuition, pure philosophy or metaphysics grounds its insights on concepts alone. Kant now makes the first of three key claims:

Properly so-called natural science presupposes, in the first place, metaphysics of nature. For laws, that is, principles of the necessity of that which belongs to the existence of a thing, are concerned with a concept that cannot be constructed, since existence cannot be presented a priori in any intuition. Thus proper natural science presupposes metaphysics of nature.²⁰

For Kant, such a metaphysics of nature is possible in two ways. It can be concerned with nature in general. This was Kant’s concern in the Analytic of Principles of the First Critique. Alternatively, the metaphysics of nature can concern itself “...with the particular nature of this or that kind of thing, of which an empirical concept is given”²¹ and it can do this in such a way that, with the exception of what is implied in this concept, “no other empirical principle will be required for its cognition.”²² Kant illustrates this point by mentioning the only two sciences, of which such a metaphysics could be possible in principle: physics and psychology. Physics takes the empirical concept of matter²³ as its basis and tries to define the sphere of a priori knowledge which can be determined about this concept. Psychology is based on the empirical concept of a thinking being.²⁴ Thus we would obtain two distinct metaphysics: one of corporeal and

19 MFNS, 4:472.

20 *ibid.*, 4:469.

21 *ibid.* At 4:472 he defines natural science as applied metaphysics, which “concerns itself with a concept given through experience, although in accordance with a priori principles.”

22 *ibid.*

23 *ibid.*

24 *ibid.* See the parallel passage in the First Critique: “And how is it possible to know the nature of things and to arrive at a rational physiology according to principles *a priori*? The answer is this: we take nothing more from experience than is required to *give* us an object of outer or of inner sense. The object of outer sense we obtain through the mere concept of matter (impenetrable, lifeless extension), the object of inner sense through the concept of a thinking being (in the empirical inner representation, ‘I think’). As to the rest, in the whole metaphysical treatment of these objects, we must entirely dispense with all empirical principles

another of thinking nature. These can be developed by applying the principles of the general metaphysics of nature to these particular empirical concepts. Kant now makes the second substantial claim about what is involved in "science properly so called":

I assert however, that in any special doctrine of nature there can be only as much proper science as there is mathematics therein.²⁵

The argument for this claim is the following: 1) Proper science of nature needs to be based on a priori knowledge of natural things. 2) To know something a priori is to know it from its mere possibility. According to the distinction introduced earlier, this amounts to knowledge of the "essence" of a thing. 3) However, the possibility of specific natural things cannot be known from their mere concepts.²⁶ 4) To obtain a priori knowledge of a specific natural thing, it is thus necessary that an a priori intuition *corresponding* to the concept of this particular object can be given, i.e. it must be possible to construct the concept of this object in an a priori manner. 5) Yet, as Kant had claimed earlier, knowledge via the construction of concepts is mathematical. 6) Thus while metaphysics of nature in *general* is possible without mathematics, a metaphysics of *specific* natural things (i.e. of body or soul) is impossible without such a mathematical construction. Thus, for Kant, a given field of knowledge can only claim to be a proper science to the extent that mathematics is applicable to it.

Psychology's claim to be a proper science is then quickly dismissed. It cannot defend this claim for three reasons. First, mathematics is inapplicable to the phenomena of inner sense – unless one wishes to adduce the minimal insight, based on the one-dimensionality of time, that the flow of the inner changes of the soul is governed by the law of continuity. Second, unlike in chemistry, in which one can at least refer to objects in space, the manifold of internal observation can only be separated in thought. Third, psychological observations alter and distort the object that is observed. (Interestingly, this has also been claimed in the meantime about the subatomic objects of particle physics.) Thus, psychology is for Kant even less than a systematic art, a title chemistry could lay claim to, and at best a mere "natural description of the soul".²⁷ There is, however, another substantial reason as to why there can be no metaphysics of thinking nature. We will come back to it in the next section.

which profess to add to these concepts any other more special experience, with a view to our passing further judgments upon the objects." (B 875f).

25 *ibid.*, 4:470.

26 Only the possibility of the thought of these, not of them as objects.

27 *ibid.*, 4:472.

In order to facilitate the application of mathematics to the science of body the metaphysics of corporeal nature must furnish principles which allow for the construction of those concepts which belong to “the possibility of matter in general”. Now, this construction of the concept of matter in general makes use of no special experiences. It restricts itself to that “which it meets with in the separate (although in actual fact empirical) concept,”²⁸ and combines this empirical content with the pure intuitions of space and time and those laws which are essential to the concept of nature in general. This combination is then to result in a genuine metaphysics of corporeal nature.

By alluding to Newton, whom he will criticize in the main body of his work for having been unwilling to deduce the third law of mechanics a priori,²⁹ Kant now points out that, even though they would have rejected the idea of being involved in anything having to do metaphysics, mathematical physicists have in fact always relied on such metaphysical principles and cannot but do so.³⁰ As might be expected, for Kant, everything that can be constructed mathematically about matter in general must be brought under the four classes of the categories, i.e. quantity, quality, relation and modality. Thus the template for the development of the metaphysics of corporeal nature is the table of the categories. This is the only way in which the empirical detail of the science of physics can be brought into a systematic framework, which is another precondition for the claim of a body of knowledge to be called a science. With this Kant reaches his third major claim:

The fundamental determination of a something that is to be an object of the external sense, must be motion, for thereby only can this sense be affected. The understanding leads all other predicates pertaining to the nature of matter back to this one, and thus natural science is throughout either a pure or an applied doctrine of motion. (4:477)

Kant will consider matter therefore exclusively with respect to the concept of motion. In an important passage from the First Critique, Kant had expressly included motion as a concept admitted to transcendental philosophy. In a footnote to § 24 of the B deduction Kant explains:

Motion of an object in space does not belong to a pure science, and consequently not to geometry. For the fact that something is movable cannot be known a priori, but only through experience. Motion, however, considered as the describing of a space, is a pure act of the successive synthesis of the manifold in outer intuition in general by means of

28 *ibid.*, 4:472. Friedman translated “intrinsically empirical”. In my view this is a serious mistranslation that is inspired by Friedman’s interpretation. See my comments at the end of section 5.2.2.2.

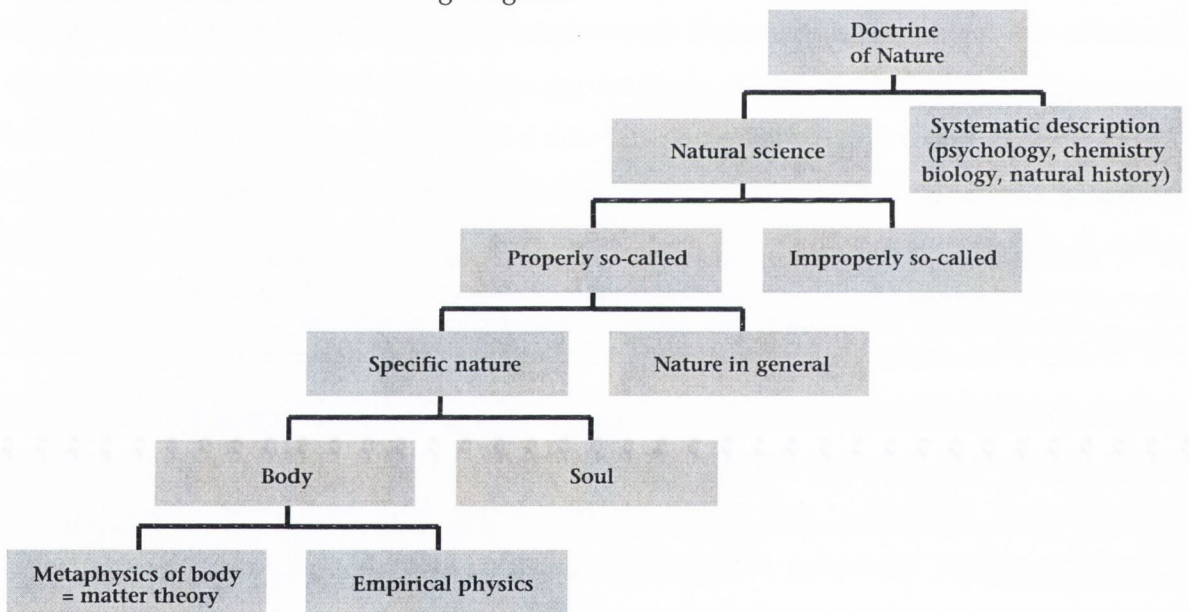
29 Newton, a transcendental realist with regard to space, which he equates with a *sensorium dei*, had been reluctant to deduce the third law of mechanics (*actio = reactio*) a priori and appealed to experience for this.

30 This observation is equivalent to what Kant had to say about the *metaphysische Weltweisheit*, i.e. the principles of inquiry guiding all scientific searching in the First Critique (B 679ff).

the productive imagination, and belongs not only to geometry, but even to transcendental philosophy.³¹

Kant will consider the concept of motion under four main divisions: first, motion considered as a pure quantum. This analysis will abstract from all quality of matter, as its shape and size, and consider it merely as a point in motion. This is the science of phronomy. Second, motion is considered insofar as it belongs to the quality of matter. The science that does this, i.e. dynamics, treats matter as an original moving force, i.e. Kant will consider matter not as something that *has* force, but as something that he essentially *equates* with force. This dynamical view of matter allows for laws “which alone leave hope for a system of forces and thus to rational explanation”.³² Third, in mechanics matter is conceived in relation to other matter through its own inherent motion, i.e. not insofar as it fills, but occupies space. 4) Fourth and finally, Phenomenology considered how we can distinguish between the true and apparent motion of material objects.

These, in outline, are Kant's claims and arguments advanced in the preface to the *Metaphysical Foundations of Natural Science*. The many distinctions made in this short text can be illustrated in the following diagram:



We cannot leave this summary, however, without taking note of Kant's statement at the end, which is directly and highly relevant to the central thesis of this dissertation, i.e. that the services which a separate metaphysics of corporeal nature provides for general metaphysics, are not only “excellent” but also “indispensable”. The reason for this is that a separate metaphysics of corporeal nature “procures instances (cases in concreto) in

31 CopR, B 155.

32 MFNS, 4:534.

which to realise the concepts and doctrines of the latter (properly the transcendental philosophy), that is, to give to a mere form of thought sense and meaning".³³

These, then, are the main stages in Kant's line of argument in the preface to the *MFNS*. In the next section I would like to address a crucial question of interpretation. Before doing so, however, I will re-emphasize and list briefly the three central claims of this text:

3.2. Summary of the three central claims of the Preface to the *MFNS*

1. *Science requires metaphysics of nature.* It would seem an uncontentious claim that, in order to engage in any sort of inquiry, we need to have a prior clear idea of the object of our inquiry, in the same way in which a proper discussion of anything can take place only if we know beforehand what would amount to a change of its topic. Likewise, if there can be no language that reports observation that does not borrow from theory, it follows further that an a priori part is required for science, i.e. no inquiry can start fully "from scratch". What is special, and would probably be contentious in a modern context, is Kant's stronger claim that the delineation of the subject matter of a science must proceed by "apodictic" statements. Thus we could not find out that matter is "non-spatial" without changing the subject of our inquiry. Thus, hypotheses and experiments are clearly not the whole story of science for Kant. There have to be postulates that constitute and define a specific field of inquiry. However, it must be remembered that Kant's theory does not prescribe to matter what it must be. All he does is clearly delineate the field of the inquiry of the science of corporeal nature, i.e. of material objects.

2. *Metaphysics of nature requires mathematics.* Whereas, for Kant, the applicability of formal – in addition to transcendental – logic is a necessary requirement for any claim to empirical knowledge (we saw in chapter two that no empirical criterion of truth could exist without it), he now adds to this requirement for the case of physics that the applicability of mathematics must also be justified. The relationship between mathematics and physics is indeed more intimate than that between mathematics and any other science, with the possible exception of chemistry.³⁴ For, while we can imagine a psychology that does not make use of mathematics (although statistics plays, of course, an important role in empirical research), it would seem impossible to do the same for physics. Mathematics is thus constitutive for physics in a way that it is not for other sciences, which is why it is

³³ *ibid.*, p. 13.

³⁴ See Wagner, *Poppers Deutung von Kants Kritik der reinen Vernunft*, p. 448f.

called an “exact” science. We should note for the argument of this chapter that the applicability of mathematics to nature is as “unobvious” as is the applicability of formal logic to nature and, therefore, rightly a cause of amazement, even though that amazement is usually not felt because we take this fact for granted.³⁵ Thus it seems to me to be crucially important to be perfectly clear about one thing: as in the case of the Principle of Judgement, which I argued in the previous chapter should not be given a strong interpretation, according to which it would establish the intelligibility in principle of the entire empirical world, the same proviso must be made also when the applicability of mathematics is added to the applicability of logic, i.e. I do not think that Kant wants to claim or assumes here that it is a priori knowable that all phenomena falling into the domain of the science of physics can be grasped or described by strict mathematical laws. Therefore the fact that in modern physics it is assumed that certain phenomena, e.g. the decay of radioactive atoms, allows only for statistical predictions, must not be seen as a challenge to or even refutation of this Kantian claim.

3. *Metaphysics of nature is a pure doctrine of motion.* For the correct interpretation of the *MFNS* it is important to stress that they are characterized as a “pure” doctrine. We saw Kant distinguish between a pure and applied science of motion. The application of the concepts and principles of the First Critique results in a *pure* science of motion. How is this to be understood? In my view it has one immediate and clear implication. The metaphysics of corporeal nature does not tell us what matter *is*, but how we have to *conceive* it *iff* mathematics is to be applicable in this field of knowledge and a science of body is to be possible. It does not provide the ontology for the phenomena explained by physics. The metaphysics of corporeal nature stands under a condition. It thus would make no sense for Kant to talk of matter outside the context of this condition, i.e. to conceive of the applicability of mathematics to a science of bodies. Another different and equally valid approach to nature could be not the scientific but an aesthetic approach. Kant will indeed have a lot to say about the aesthetic appreciation of nature in the Third

35 About our related failure to admire the applicability of formal logic to nature, an applicability which, for Kant, is a cause of “joy”, he has this to say: “It is true that we no longer notice any decided pleasure in the comprehensibility of nature, or in the unity of its divisions into genera and species, without which the empirical concepts, that afford us our knowledge of nature in its particular laws, would not be possible. Still it is certain that the pleasure appeared in due course, and only by reason of the most ordinary experience being impossible without it, has it become gradually fused with simple cognition, and no longer arrests particular attention.” (CoJ, B XL). Yet see Russell: “We do not know who will be the inhabitants of London a hundred years hence; but we know that any two of them and any other two of them will make four of them. This apparent power of anticipating facts about things of which we have no experience is certainly surprising.” (Russell 1980, p. 48).

Critique.³⁶ The metaphysics of corporeal nature constitutes, like the arguments of the First Critique, a transcendental and thus merely *foundational* exercise, as the title *Metaphysical Foundations of Natural Science* emphasizes. It clearly indicates how modest or even humble its goal really is. It stops short of questions relating to detailed scientific problems, even problems concerning the mathematical details of the solution to special problems in physics proper. Kant repeatedly makes this point, perhaps nowhere more strongly than in the following context. Regarding the problem as to how one might conceive of the possibility of a space filled to a determinate degree based on the existence of the essential attractive and repulsive forces of matter, Kant says that this is

... a task belonging to pure mathematics, and with which metaphysics is no longer concerned, not even as regards the responsibility of constructing the conception of matter in this way, *in the event of its non-success*. For it is responsible only for the correctness of the elements of construction vouchsafed to our cognition of pure Reason, but for the *inadequacy and the limits* of our Reason, in its working out, it is not responsible.³⁷

In my view this clearly demonstrates two things: (1) how limited the claims of the *MFNS* in fact are, and (2) how far removed Kant's theory is from solutions to special problems posed by empirical research in physics. This is evidenced in particular by the fact that not even the "non-success" of an attempted solution based on the central doctrines of the metaphysics of corporeal nature casts doubt on them!

This may suffice as a brief summary of Kant's arguments for the need of a special metaphysics of corporeal nature and the only way he thinks it is possible. As in the previous chapters, and for the same reasons, i.e. to contextualize and clarify the above account, I would now like to turn to a question of interpretation that this brief account gives rise to. Yet before I do so I first want to make the way in which Kant's account presented above stands under a number of important provisos more explicit.

The *MFNS* only analyse the nature of matter understood as the possibility of matter, not its nature as that which determines its existence which is as "unfathomable" as the nature of dynamical connection. Kant insists merely that a) we cannot enter into an empirical inquiry concerning bodies without making at least some minimal assumptions about the objects we set out to investigate; and b) this selection of basic assumptions

³⁶ In his letter *Über den Humanismus* Heidegger contemplates the related point that modern science, or rather the technology based on it, might have alienated humanity from other ways of looking at nature: "However, it is possible that the aspect of nature that it reveals to the technical domination by humanity, is precisely the one which hides its essence." (ibid., p. 16) ("Es könnte doch sein, dass die Natur in der Seite, die sie der technischen Bemächtigung durch den Menschen zukehrt, ihr Wesen gerade verbirgt.") Thus the other aspects of nature might be lost when it is considered to be reducible in its entirety to matter in motion and its properties. It seems to me that Kant's theory of matter does not entail such a claim.

³⁷ *MFNS*, 4:517 (italics added).

must not be rhapsodic but principled. Kant does not say what matter essentially is (speculations of the kind Plato makes in the *Timaeus* at 53d where he contemplates the view that the ultimate constituents of reality are more like mathematical than material objects, would be impermissible for Kant) but only how we have to conceive matter if we want to build a systematic theory of it. To know a specific natural thing a priori it is required that the intuition corresponding a priori to the concept of this object be also given, i.e. the concept must – at least in part – be constructable. We learn nothing of the characteristics that pertain to the existence of a *specific* natural kind. Yet these do obviously exist. Kant is no nihilist, only an agnostic with regard to the concept of real essence. We will see in the section on Kant's theory of definition that he is no nominalist. We saw this already when discussing Allison's reading of the Principle of Judgement. Yet the expectations raised by the Aristotelian idiom concerning the essence of things quoted at the beginning of this chapter were misleading: the only aspect pertaining to the existence of things in nature that we can determine a priori is that which explains the applicability of mathematics to them. In the next section I shall address a question of interpretation raised by the above account. This is the question as to whether the *MFNS* can be said to offer a definition of the concept of matter.

4. Do the *MFNS* offer a definition of the concept of matter?

To reach a clearer understanding of the relationship between the empirical and the transcendental aspect of the concept of matter, I think it will help to examine what Kant has to say about the definition of concepts generally, both in the First Critique (B 755-760) and in his Lectures on Logic (§99 to §109).³⁸ Although somewhat technical, the content of these texts will repay the effort spent on them: it will serve to clarify Kant's general views on empirical concepts and this, in turn, will provide important guidance on how to answer the question as to whether there is a sense in which the concept of matter elucidated in the *MFNS* can be said to be an empirical concept.

4.1. Kant's definition of "definition"

According to Kant's strict definition of a definition, it is the precise and comprehensive list of the original characteristics of a concept: "To *define*, as the word itself indicates, really only means to present the complete original concept of a thing within the limits of

38 The logic lectures edited by Jäsche. The translations from this edition are my own.

its concept."³⁹ This presentation is complete if all coordinated characteristics of the concept have been clarified, whereby an "extensively complete or sufficient clarity"⁴⁰ is also achieved. The explication is precise if the limits of the exhaustive list of the coordinated characteristics is not transgressed.⁴¹ A definition is, finally, original if the drawing of the limits of the concept is not derived from somewhere else, in which case it would require proof.⁴² With these requirements of a definition in mind, I shall now consider Kant's distinction between given and made concepts⁴³ or between the making of explicit concepts and the making explicit of concepts.⁴⁴ Given concepts are defined analytically whereas made concepts originate via synthetic definitions. The given concepts of an analytic definition and the made concept of a synthetic definition are made or given either a posteriori or a priori. This results in different types of definition I would now like to look at more closely.

4.2. The types of definition

The connection between these distinctions and Kant's further classification of all definitions as either nominal or real definitions has been helpfully clarified by Beck in the following table:⁴⁵

	analytic		synthetic	
nominal	logical definition		declaration	
real	<i>a priori</i> exposition	<i>a posteriori</i> description	<i>a priori</i> construction	<i>a posteriori</i> invention

Kant says little about analytic nominal definitions. Unlike real definitions which are based on the essence of a thing, they are merely "taken from an attribute".⁴⁶ In the Reflexionen pertaining to this type of definition collated by Beck, Kant deals with the connection of the meaning and the use of concepts. The nominal definition of given empirical concepts contains "what everybody always thinks under a word" (Reflexion 2918). One either gives a word its concept on the basis of the use of this word or one establishes the use of a word by giving an arbitrary concept its word (Reflexion 2931, distinguished as *declaratio nominalis* or *realis*). According to Reflexion 2963, the definitions

39 CopR, A 727/B 755; A 728/B 756 fn.

40 Logik, A 93.

41 *ibid.*, A 93.

42 CopR, A 227 and B 755, fn.

43 Logic, § 100.

44 *ibid.*, A 94.

45 L. W. Beck 1956, p. 184.

46 See footnote to § 106 of the Logic.

of arbitrary concepts can be deduced from their use. Synthetic nominal definitions are those through which a concept is made. They are equivalent to declarations of a certain use and determined neither by experience nor by the analysis of a given concept.⁴⁷ In such a declaration we give an account of what we want to be denoted by a certain word.⁴⁸ In the case of analytic real definitions one must distinguish between a priori and a posteriori concepts. Categories, which are a priori given concepts, cannot, according to Kant, be defined because such concepts “as given, include many obscure representations, which we overlook in our analysis, although we are constantly making use of them in our application of the concept”.⁴⁹ As a result of this the completeness of the analysis of such a concept is always doubtful. Because it can at best become probable through many examples but never reach apodictic certainty, Kant wants such a “definition” to be called an exposition instead.⁵⁰ Similar provisos apply when a given concept is an a posteriori, i.e. an empirical, concept. Such a concept cannot be analysed exhaustively because it has no fixed unity of its characteristics. About the concept gold, Kant remarks that “someone may think, in addition to its weight, colour, malleability, also its property of resisting rust”⁵¹ whereas somebody else might not know anything about this feature of gold. And since we not only not think the same as others when we use empirical concepts but not even the same ourselves at different times, empirical concepts do not even allow for a nominal definition.⁵² Because they depend on the state of our individual or collective experience, the limits of empirical concepts are therefore “never certain”.⁵³ New experiences may remove old characteristics and add new ones. The definition of an empirical concept can therefore be no more than a “so-called definition” and is nothing more than “a determining of the word”. Yet this suffices because when we talk about water, for example, we do not attend to what we think under this word but instead “proceed to experiments”.⁵⁴ Beck illustrates this point succinctly by saying that empirical concepts are

47 See Beck, p. 184.

48 See Logic, § 103, fn. See also Kant's relevant observation in the Third Critique; § 59: “Thus the words ground (support, basis), to depend (to be held up from above), to flow from (instead of to follow), substance (as Locke puts it: the support of accidents), and numberless others, are not schematic, but rather symbolic hypotyposes [= presentations, MW], and express concepts without employing a direct intuition for the purpose, but only drawing upon an analogy with one, i.e., transferring the reflection upon an object of intuition to quite a new concept, and one with which perhaps no intuition could ever directly correspond.” (B 257).

49 CopR A 728/B 756. According to CopR A 245 categories cannot be defined, because definitions as judgements always already presuppose the forms of judgements.

50 See CopR A 729/B 757.

51 CopR, A 728/B 756.

52 See Beck, p. 185.

53 CopR, A 728/B 756.

54 *ibid.* See also Beck, p. 187.

more *tools* than *parts* of knowledge. The analysis of a given a posteriori concept is thus no more than an exposition which supplies the material for a definition which itself always remains nothing but “the idea of a logical completeness which we have to aim for” (Logic, § 105).

In a synthetic real definition not only is the concept made but one must also be able to demonstrate its real possibility. This is the case with the pure concepts of mathematics. They cannot ever be mistaken because “mathematical definitions *make* their concepts” (B 758) and contain only what the definition wants to be thought in them. The reality of mathematical concepts can be demonstrated in pure intuition. Mathematics is thus the only science that fully deserves this title, which is, as we saw earlier, an important point when it comes to determining how scientific a certain field of knowledge can be.⁵⁵ The synthetic real definition of an empirical concept is nothing but the declaration of the intention to produce an object in accordance with the concept. As an example for this Kant mentions a ship’s clock.⁵⁶ According to Reflexion 2964, we can define an empirical concept only if we produce the object the concept denotes, as in the case of cement or cinnabar. In such a case, however, all we know is the way in which these substances are made from other substances and not all the characteristics of these compounds. All empirical concepts of objects which are not the result of human production cannot be defined because the synthesis of these empirical concepts “is not arbitrary but empirical” (Logic, § 103) and, as such, cannot be complete because it is always possible that through experience we may find more characteristics of the object. Our attempts at such definitions result from our need to communicate in a relatively unambiguous language and we therefore fix the meaning of empirical concepts from time to time in merely nominal definitions.⁵⁷ They suffice to allow us to classify the objects of experience, yet give us no insight into the essence of the objects thus referred to. They are not “internally sufficient” (Logic, § 106) or, rather, we can never know whether or not they are. For even if our empirical concepts grasp essential characteristics of their objects, we have no way of knowing this. It remains possible that experience has so far only revealed accidental characteristics of an object. In the same way in which a historian cannot know whether the sources on which she bases her understanding of a

55 See CopR, A 242: “I here mean real definition – which does not merely substitute for the name of a thing other more intelligible words, but contains a clear property by which the defined *object* can always be known with certainty, and which makes the explained concept serviceable in application. Real explanation would be that which makes clear not only the concept but also its *objective reality*. Mathematical explanations which present the object in intuition, in conformity with the concept, are of this latter kind.”

56 CopR, B 757.

57 see Beck 1956, p. 187.

certain historical period document and preserve the traces of the events that best explain what happened, we cannot claim that our empirical, and to that extent also historical, concepts grasp all the essential characteristics of their objects, although we do, of course, presuppose this for the most familiar objects. It remains possible that all the examples of the object in question have displayed peculiarities not essential to its kind. Thus Kripke points out in *Naming and Necessity* that some gold is white.⁵⁸ (However, white gold is not pure gold but an alloy of gold and nickel or palladium.) Yet there can be pure gold that is not yellow. It is possible to deform the surface of pure gold with a laser technique in such a way that it appears deep black. Through this technique the surface is immensely increased so that it absorbs virtually all the light that falls on it. Thus although it is, unlike white gold, unalloyed pure gold it is nevertheless black rather than yellow.

The above brief account of Kant's theory of definition allows us to conclude the following: matter cannot be both an empirical concept *and* a concept that has essential characteristics, as we will see is maintained by Plaass and Friedman. As Kant is not trying to define what matter essentially is in the *MFNS*, he cannot want to give us a definition of the empirical concept of matter. We should, however, note that nothing Kant says about definition rules out the possibility of definitions for empirical concepts in principle. The problem is an epistemological one of our ignorance, not an ontological one, i.e. Kant is not committed to a denial of the essences of natural kinds. What I pointed out in the previous chapter when assessing Allison's interpretation of Kant's Principle of Judgement can thus be repeated in this context: Kant is not a nominalist.

4.3. Interim result: a synoptic overview of Kant's metaphysical concept of matter

Before I engage with my two chosen critics I would like to set out as clearly as possible in a synoptic summary how, in my view, Kant's metaphysical concept of matter should be understood and thus secure an interim result of this chapter:

- 1 Kant's metaphysical concept of matter does not refer directly to any empirical object. Metaphysical matter is not encountered in experience but is one of the conceptual and formal transcendental presuppositions preceding systematic experience, i.e. the scientific investigation of physical objects.
- 2 The empirical concept of matter is not related to the concepts of metal and non-metal in the same way in which the concept metal is related to the concepts of gold and silver, i.e. matter is no genuine empirical concept because it is no genus proximum as metal is for the types of metal understood by this concept. Its *differentia*

⁵⁸ Kripke 1980, p. 137.

- specifica* is not storable in empirical terms, but rests on the a priori difference between the two modes of sensible intuition, i.e. space and time.
- 3 The metaphysical concept of matter does not compete with other explanans in physics, i.e. matter is a purely metaphysical and abstract, not a physical concept.
 - 4 While an abstract concept, matter nevertheless grounds the empirical concept of physical object or body. Through this concept the empirical science of physics links up to and gains a foothold in “the pure functions of thought”, as Kant put it. If this were impossible, physics would lack a systematic foundation for one of its most basic concepts. It would have to be built on purely empirical concepts and laws and would thus not qualify for the title of a proper science.
 - 5 Matter is an intermediate concept between the category of substance and the empirical concept of a something in space, something with a “corporeal nature”.
 - 6 Matter does not exist, only physical bodies of a certain kind, i.e. lumps of gold etc. That they behave like substances is not guaranteed by the application of the concept of substance to them. It is a “lucky chance, that favours us”.⁵⁹
 - 7 Kant’s metaphysical concept of matter is highly etiolated. It does not provide a complete account of matter – as an objective or absolute idealism might attempt to offer us.
 - 8 Without the contingent and unanticipatable existence of empirical objects that happen to behave like substances, i.e. lumps of gold, silver, stone etc., the concept of matter would not find application.
 - 9 The metaphysical concept of matter underdetermines genuine substantiality.
 - 10 For Kant the empirical world is neither fundamentally physical nor fundamentally mental. It is a totality of forces (even the mind is a force: a capacity to judge: *Urteilkraft*) and law-governed movements which indicate these forces.

5. Three rival interpretations

Having summarized how I think we should understand Kant’s theory of matter, I would now like to turn to the assessment of three rival interpretations of Kant’s matter theory. I shall try to respond to the elements of these interpretations that differ from the interpretation I advocate. The detailed engagement with these critics will offer the opportunity to develop further and clarify this interpretation. I shall first evaluate the strong interpretation of an early critic, Plaass, because it has continued to influence other critics. I will then analyse the strong interpretation of Friedman. I will argue that his

⁵⁹ CoJ, B XXXIV.

reading fails to do justice to crucial passages of both the first Critique and the *MFNS*. Finally, I shall look at Buchdahl's interpretation. This critic advocates a weak interpretation of Kant's theory of matter. He reads it as a general conceptual analysis or investigation into what lies at the basis of the concept of matter rather than as a deduction of the essential properties of matter. This interpretation is the other extreme of that recommended by Friedman. Whereas, in my view, Friedman sees the *MFNS* as too closely tied to the Critique of pure Reason,⁶⁰ I think that Buchdahl exaggerates the independence of the *MFNS* from the First Critique. While I agree with Buchdahl in his opposition to the strong reading of Friedman, I think that he makes the opposite mistake to Friedman. I shall argue that his interpretation likewise fails to do justice to Kant's overall argument, especially to Kant's claim, already mentioned, that the services that the metaphysics of corporeal nature does general metaphysics are "indispensible" (AA, p. 478). If Buchdahl's reading were correct, Kant's *MFNS* would be no more than an optional corollary to the First Critique.

5.1. On Plaass's theory that the concept of matter is a metaphysical construct

Regarding the empirical concept of matter, Plaass claims that its content can be determined via a metaphysical construction in which the content of the concept of matter is understood as the content of the concept of *actual* physical matter, not merely of the essence of matter which, as we saw earlier, according to Kant merely pertains to its *possibility*. Thus when Plaass claims that what is empirical is "not the content of the concept, but the fact of its objective reality",⁶¹ he evidently assumes that what Kant develops a priori in the metaphysical concept of matter is confirmed a posteriori. This, I think, confuses the two concepts of matter I distinguished earlier. If Plaass's reading were correct, Kant would have deduced special perceptions from the combination of pure concepts, pure intuition and a general concept, i.e. body, and in doing so he would have given an example of the kind of metaphysics he opposed so strongly. That he did not intend to do this can be seen clearly from the passage in the *MFNS* where he explains that not only its law, but even general attraction itself, which he says belongs to the

60 This view is shared by Wagner who sees the relationship between the First Critique and the *MFNS* as one of "one-sided dependency" of the latter on the former. (cf. Wagner, *Poppers Deutung von Kants Kritik der reinen Vernunft*, p. 452.)

61 Plaass, p. 88. Schäfer (p. 32) also shares this view. He claims that the metaphysics of nature cannot regard the laws of nature as a conditions of its intelligibility simply as a fact (see p. 37). Contrary to this view, I think that Baumanns is correct to maintain "that the conformity of the given to the understanding cannot be proven" but that it is instead a simple "de facto presupposition" (see Baumanns 1979, p. 65). On this point, see also Simon 1971, p. 284.

essential features of matter, must be inferred from data of experience.⁶² The metaphysical concept of matter that takes as its basis the *Gründerfahrung*⁶³ that there exists a something of outer sense⁶⁴ and then shows how this has to be thought, *if it is to be an object*,⁶⁵ is a conditional concept, one of the “essence” of matter, as Kant says. This cannot be said of the empirical concept of matter. If we identify both concepts, we confuse a formal transcendental condition of experience with a concept abstracted from it. The matter we encounter in experience is always a particular physical object of “this or that kind”,⁶⁶ whereas matter in general is a “conceptual presupposition prior to experience and not an object”⁶⁷ we meet in experience. Thus it is not the case that the gravity we encounter in experience confirms the metaphysical concept of matter.

Towards the end of his investigation Plaass interprets the passage of the *MFNS* where Kant says that the inquiries of metaphysics into the foundations of that which lies at the basis of the empirical concept of matter⁶⁸ only serve the purpose of guiding natural philosophy (i.e. physics) as far as possible “to the investigation of dynamical grounds of explanation”,⁶⁹ as these alone would let us hope to find definite laws and thus rational explanations. He points out that by this guidance “the facts and thus truth is not subject to any distortion”.⁷⁰ However, a certain way of considering something cannot distort it when it is constituted only by this way of considering it. And, in my view, this is precisely what happens in the case of the metaphysical concept of matter. According to Kant’s way of considering matter false theories can only be advanced of the empirical and scientific and not of the metaphysical concept of matter. Although through “observation and analysis of appearances we penetrate to nature’s inner recesses” (B 334) – and, compared to what Kant knew, modern physics has certainly increased our knowledge of the inner structure of matter immeasurably – this increase in knowledge does not necessarily contribute to the correct understanding of the philosophical concept of matter.⁷¹

62 *MFNS*, A 104.

63 *CopR*, A 172/B 213.

64 See also *CopR*, B 876, where Kant says that nothing more is taken from experience than what is required to give us an object of outer sense.

65 *MAdN*, A IX, “...ein Gegenstand ... sein *soll*” (italics added).

66 *ibid.*

67 Simon 1976, p. 383.

68 *MAdN*, 4:534.

69 *ibid.*

70 Plaass, p. 119.

71 On the relationship between these from a scientific point of view see Werner Heisenberg, “Das Naturgesetz und die Struktur der Materie”, pp. 187-207 as well as Gadamer’s article “Gibt es die Materie?” for an assessment of this relationship from a more general philosophical perspective.

We can see that Plaass regards the metaphysical concept of matter that results from the construction of the empirical concept at its basis as that of a real physical object. He dismisses the worry that this concept is only a hypothetical one because it stands under a condition, i.e. that of wanting to engage in the scientific investigation of physical bodies. Yet I think this is exactly what Kant is aiming at: he wants to show what matter has to be conceived as, *iff* a science of physical objects is to be possible. Plaass's worry seems to be that the characteristics of a concept arrived at in this way cannot be necessary ones. However, for Kant, this danger is averted by the fact that the table of the categories guides the construction of this concept. We saw in the first chapter that we can regard a sequence of perceptions as informing us of a real event only if we assume that the moments in time, in which we experience this event, follow each other with necessity. Yet this need to think in this way does not establish that the sequence thus perceived is itself an example of physical necessity. The same is true regarding the concept of matter: if we want to make knowledge claims about physical objects, we have to think of matter as force in space, because, according to Kant, as all forces of matter require space for their manifestation, a priori knowable space contains "the conditions of the laws of diffusion of these forces",⁷² and in this way the applicability of mathematics to the science of corporeal nature becomes conceivable.

If one agrees with Simon that the metaphysical concept of matter is on a par with another basic philosophical concept, that of freedom,⁷³ one can say that neither concept can be verified but merely defended against those "who profess to have seen more deeply into the essence of things".⁷⁴ This is exactly what Kant is doing when he points out against Democritus' "fundamental particles of determinate shapes"⁷⁵ that they cannot be determined or discovered by any experiment. In the *Groundwork of the Metaphysic of Morals* Kant says that, for every being that can only act under the presupposition of its own freedom, all of those laws are applicable that can be seen as necessarily connected with the idea of freedom.⁷⁶ Analogously, we can say about the metaphysical concept of matter that we have to assume as a constituent part of it everything that is required to conceive of it as a basic concept of a mathematizable science of corporeal nature.⁷⁷ I shall now look at Friedman's interpretation.

72 MFNS, 4:534.

73 See Simon 1976, p. 383.

74 GMM, A 121 (Paton, p. 127).

75 MFNS, A 102 (4:533).

76 GMM, BA 121.

77 See MFNS, A 78.

5.2. The strong interpretation of Kant's Theory of Matter: Friedman

In the following section I will examine Friedman's strong interpretation of Kant's theory of matter as he articulates it in his article "*Matter and Motion in the Metaphysical Foundations and the First Critique*".⁷⁸ I will also consider some claims from chapter 4 of his *Kant and the exact Sciences*, in which Friedman dealt with problems addressed in this article 11 years earlier. I will, however, mainly concentrate on the more recently published article. I will first give a concise summary of Friedman's argument and then come back to it for a critical assessment.

Friedman begins his article with an overview of what he takes to be uncontroversial about Kant's *Metaphysical Foundations of Natural Science*. Friedman rests his interpretation on the assumption that the *MFNS* are intended to "realize" the more general system of transcendental principles of the Critique of Pure Reason. In the *MFNS* these principles are further specified to result in pure principles of natural science. Thus the category of substance, for example, is realized in terms of the quantity of matter. More specifically Friedman maintains:

The bridge between the two systems, between general metaphysics and special metaphysics, is what Kant calls 'the empirical concept of matter'.⁷⁹

When we add this concept to the abstract concepts of transcendental philosophy we obtain the principles of the metaphysical doctrine of corporeal nature from them. However, when we have to explain what precisely the content of the concept of matter is and how exactly it is related to the categories of the First Critique, we are immediately "plunged into what appear to be insuperable difficulties".⁸⁰ Friedman then addresses two questions:

a) what is the content of the concept of matter?

and

b) how is it possible to extract a priori knowledge from an empirical concept?

Quoting the passage in which Kant says that we require an intuition corresponding to an object if we want to construct its concept,⁸¹ Friedman interprets this as saying:

a) the content of the concept of matter is given wholly a priori;

b) objects corresponding to this concept can also be given wholly a priori

78 In: Watkins 2001.

79 *ibid.*, p. 53.

80 *ibid.*, p. 54.

81 See *MFNS*, 4:470.

However, it now appears as though the sense in which the concept of matter is empirical is evaporating. This gives rise to the worry that the concept of matter might not be “really empirical after all”.⁸² Friedman sees this reading as supported by a passage about the relationship between special and general metaphysics,⁸³ in which Kant appears to be saying that, were it not for the special metaphysics of corporeal nature, the pure categories of the First Critique would lack objective reality. Having quoted from a related passage from the First Critique,⁸⁴ Friedman concludes from this passage that it would appear that “we need the concept of matter to demonstrate the objective reality of the categories”,⁸⁵ and that matter can therefore hardly be an ordinary empirical concept. This prompts his diagnosis that “something has gone terribly wrong”.⁸⁶ According to Friedman it is beyond doubt that Kant thinks that the concept of matter is a source of a priori knowledge. However, it would be intolerable if it emerged that the special metaphysics of corporeal nature was needed to demonstrate the objective reality of the categories. For this would entirely erase the distinction between transcendental philosophy (or general metaphysics) and special metaphysics. It would be equally intolerable if one could prove the objective reality of Kant’s concept of matter by mathematical construction, or worse again, if the objective reality of the categories were provable in this manner.

Friedman then sets himself the task of untangling the questions he has raised. Rather than following his textually rich and detailed argument, from now on I will concentrate exclusively on those claims I find particularly problematic. Friedman raises the question as to which are the empirical objects required to provide concrete instances which realize the pure concepts of the understanding, and reaches the conclusion that it is the solar system with the other heavenly bodies. He then states the following:

If this system were not given to us in perception, then we would have no basis whatsoever for ‘extracting’ the fundamental forces of attraction and repulsion ‘from data of experience’. Therefore, if this system were not given to us in perception, the empirical concept of matter would have no actual object corresponding to it – and thus no objective reality.⁸⁷

82 *ibid.*, p. 55.

83 See MFNS, 4:478.

84 “But it is an even more noteworthy fact, that in order to understand the possibility of things in conformity with the categories, and so to demonstrate the *objective reality* of the latter, we need, not merely intuitions, but intuitions that are in all cases *outer intuitions*. When, for instance, we take the pure concepts of *relation*, we find, firstly, that in order to obtain something *permanent* in intuition corresponding to the concept of *substance*, and so to demonstrate the objective reality of this concept, we require an intuition in space (of matter).” (B 291) (*italics original*).

85 *ibid.*, p. 55.

86 *ibid.*, p. 55.

87 *ibid.*, p. 60. See also “Therefore we can only exhibit the real possibility of the two fundamental forces constituting Kant’s dynamic concept of matter by perceiving their actuality in experience itself...” (p. 58) With this claim Friedman contradicts Plaass who claims that the content of the concept of matter is a priori.

The second half of Friedman's article appropriately turns from the concept of matter to the concept of motion for, as we saw earlier, motion is the key concept that provides Kant with the foundation on which he builds his metaphysics of matter. Having examined a number of relevant passages from both the *MFNS* and the First Critique (some of the details of their discussion I will come back to later), Friedman reaches the conclusion that it is the transition from the pure to the empirical concept of motion that brings the *MFNS* and the First Critique "into a priori connection, as it were".⁸⁸ Friedman summarizes his reflections in the following closing statement:

The empirical concept of matter, a representation having one foot in the a priori basis for empirical knowledge provided by a combination of metaphysics (that is *general* metaphysics) and mathematics, and the other foot in the necessary conditions for the application of this a priori basis to the actual objects of perception we in fact find arranged about us (the system of heavenly bodies), thus emerges naturally as the solution to Kant's problem.⁸⁹

Finally, however, although in Friedman's view the solar system is the only system we know that bestows objective reality on the empirical concept of matter and which fully realizes the pure concepts or categories in experience, it cannot be said to be the only such system. Therefore the question arises as to what confers objective reality on the categories. It is not any specific empirically given set of objects. According to Friedman it is instead the a priori schematization of the categories in pure intuition, for this alone is general enough to provide the a priori grounding for those objects of experience to be yet explained as science advances. This is the gist of Friedman's article and may suffice as a summary of Friedman's understanding of the relationship between the *MFNS* and the Critique of Pure Reason. I shall now turn to its assessment.

5.3. Reply to the strong interpretation of Kant's Theory of Matter: Friedman

Before I engage in detail with Friedman's arguments and claims as set out above, I would first like to make some comments on Friedman's reading of the *MFNS* generally. What I think lies at the bottom of his entire interpretative approach, and which gives rise to problems he ultimately does not solve, is his view that we are dealing with just one concept of matter. Yet this leads him into insuperable difficulties. Let us look at the most difficult problem faced by an interpretation based on this assumption. Friedman says early on in his article:

Empirical is only the fact of its real existence. See also footnote 6 of Friedman's article and the section on Pless above.

88 *ibid.*, p. 64.

89 *ibid.*, p. 66.

But we know from the *Metaphysical Foundation* that precisely these concepts – impenetrability and weight – are essential constituents of the empirical concept of matter and, as such, are manifestations of the fundamental forces of repulsion and attraction respectively.⁹⁰

Friedman here regards impenetrability and weight as empirical indications of the fundamental forces of repulsion and attraction.⁹¹ Yet this interpretation runs immediately into what seems to me to be a very serious difficulty: it cannot make sense of the fact that the first two clearly belong to the empirical world – not only their laws but their very existence has to be “inferred from data of experience”⁹² – whereas in the proofs for propositions 1 and 5 of the *Metaphysical Foundations of Dynamics*,⁹³ Kant provides two separate a priori transcendental arguments for the fundamental forces of repulsion and attraction. How are we to understand this aporia? Is Kant saying both: (i) that the same two forces must be inferred from experience and (ii) that they can also be shown to exist by a priori arguments? Yet this is what Friedman’s reading entails. The solution I suggest for this interpretative puzzle is that we are dealing not with one but with two concepts, the empirical and the metaphysical concept of matter, and that these need to be distinguished carefully in the same way and for the same reason that Friedman distinguishes between the pure and empirical concept of motion. Friedman’s failure to distinguish between the empirical and metaphysical concept of matter is similar to the one I maintained informs his interpretation of the Second Analogy developed in his article *Causal laws and the foundations of natural science* which I assessed in chapter one. The title of this article already suggests how closely related the two philosophical topics of matter and causality are and thus that the understanding one adopts of the one is bound to be reflected in the interpretation one accepts for the other. In the article on causal laws Friedman maintains that the key problem posed by Kant’s analysis of the principle of causality is to understand how the transcendental principles “inject necessity into empirical laws of nature so as to secure them a more than merely inductive status”.⁹⁴ Analogously, Friedman maintains in chapter 4 of his *Kant and the exact Sciences* that, despite the fact that it is an empirical law, the universal law of gravitation “still enjoys a particular kind of ‘empirical’ or ‘material’ necessity in virtue of which it is more firmly established and secure relative to the a posteriori given data than any mere inductive

90 *ibid.*, p. 56.

91 Friedman has reiterated this interpretation in a recently published article. See his *Kant, Skepticism and Idealism* (in: *Inquiry*, vol. 49, no. 1, Feb 2006). On page 35 he claims that gravity is one of “the most general properties of all matter in general”. I thank Dr Lilian Alweiss for drawing my attention to this article.

92 MFNS, 4:534.

93 At (4:497) and (4:509) respectively.

94 Friedman 1992a, p. 175.

generalisation or hypothesis.”⁹⁵ In an effort to explain how this is possible Friedman, assuming he is relating Kant’s theory, yet in my view providing evidence of his own misinterpretation, explains:

The laws of motion are not empirical facts about true motions but a priori conditions of the possibility of such motions – just as the analogies of experience, which the laws of motion are intended to instantiate or realize, are not facts of objective experience but a priori conditions of the possibility of such experience.⁹⁶

I do not believe it states Kant’s theory correctly to say that the laws of motion developed in chapter three of the *MFNS* are “a priori conditions of the possibility” of true motions. That would make them ontological conditions, albeit of appearances. With this reading Friedman credits the mind with the power to determine or guarantee something about the way the world of experience must be. However, Kant consistently warns his readers against such an understanding of his transcendental philosophy, nowhere more emphatically than in the following passage from the Doctrine of Method of the First Critique where he talks about the difference between mathematics and pure philosophy, an exercise with which we can identify his undertaking in the *MFNS*. He says about the use of the mathematical method that it has

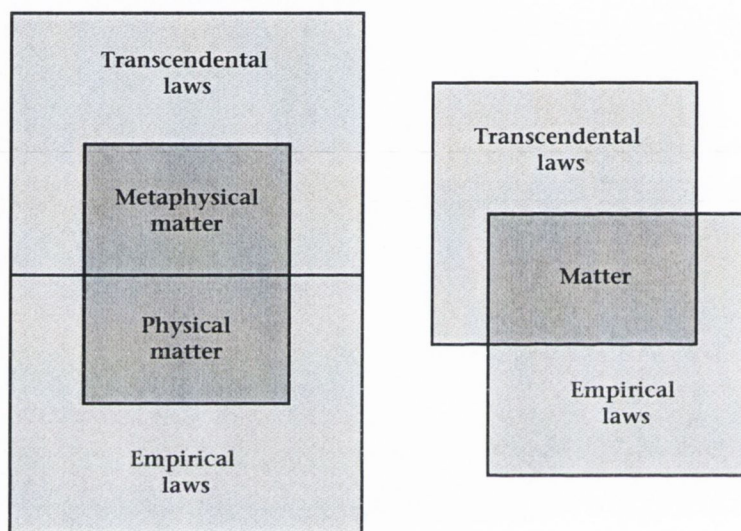
...the advantage of being able to realise all its concepts in intuitions, which it can provide a priori, and by which it becomes, so to speak, master of nature; while pure philosophy, on the contrary, blunders about in nature with discursive a priori concepts without being able to intuit a priori their reality and thereby to confirm it. (B 753)

The above translation is my own adapted from Kemp-Smith and Guyer. Guyer translates Kant’s “herumpfuschen”, which I translated as to *blunder about*, with “to fumble around”, whereas Kemp-Smith seems to make no real attempt to translate it. However, I think Guyer’s rendering is not strong enough. “Fumbling around” sounds too harmless, yet the meaning of “herumpfuschen” is quite strong. It does not just suggest ineptitude but active harm being done, as in “Kurpfuscher”, the German term for “quack doctor”. I think that to believe that the *MFNS* do not merely show how we have to conceive matter, if we want to apply mathematics to its study, but that they deduce by a priori reasoning what matter must be, is indeed to make the mind, contrary to Kant’s explicit view, the “master of nature”. Yet the mastery that mathematics is able to perform is restricted to the *formal* element of experience and it has no guarantees attached to it when it comes to its application in concrete cases. Thus, as I see it, Kant is not claiming in the *MFNS* that no

⁹⁵ Friedman 1992, p. 167. Chapter 4 *Kant and the exact Sciences* interprets § 38 of the Prolegomena where Kant examines the role played by mathematics, in this case by geometry, in the establishment of the universal law of gravitation, which Friedman takes to be an essential feature of matter.

⁹⁶ *ibid.*, p. 171.

matter could fail to be intelligible by mathematical laws. Therefore, rather than regarding the laws of motion developed in chapter three of the *MFNS* as a priori conditions of the *possibility* of true motion, I think we must understand them as a priori conditions for the possibility of a *theory* of true motions. This slide from a transcendental to an ontological reading directly parallels Friedman's reading with regard to the Second Analogy and Kant's understanding of causality. In that context Friedman did not pay the required attention to Kant's all-important distinction between "the *physical* connection of the appearances with one another, and their *metaphysical* connection in the a priori faculty of knowledge".⁹⁷ The way Friedman seems to me to interpret Kant's theory of matter and the way I think it should be interpreted can be illustrated by the following two diagrams:



The line between the empirical and the transcendental laws and principles runs right through the concept of matter and results in there being not one but two concepts of matter. Friedman, in my view, states correctly that the objective reality of pure concepts "does not consist in their having corresponding objects."⁹⁸ Now, I suggest that the exact same is also true of metaphysical matter : the only thing that has empirical existence are physical objects. Metaphysical matter is merely a conceptual construct that has no correlate in the physical world. It is part of the "essence" of the physical world as it is conceived in Kant's Transcendental Idealism, not part of what enjoys physical existence. If it were otherwise, Kant's arguments against the atomistic conception of matter would not just be what they are, i.e. a polemic against a dogmatic view, but they would amount

97 Footnote to B 202. italics added. See also the related passage "I do not here assert that these representations necessarily belong to one another in the empirical intuition, but that they belong to one another in virtue of the necessary unity of apperception in the synthesis of intuitions..." (B 141).

98 Friedman 2001b, p. 58.

to an a priori dogmatic proof of what matter must be. He would thus, by thinking alone, independently of all perception, have extended our knowledge of the empirical world whereas I think that all he wants to do is to *license* a dynamical view of matter and make room for it because, in his view, this alone allows us to hope for “a true rational coherence of explanations”.⁹⁹

As promised earlier, I would now like to comment briefly on Friedman’s arguments listed above. *First*, given the view I have just defended, it is obvious that I do not think one could describe the empirical concept of matter as the “bridge” between general and special metaphysics. Instead I think it would be more adequately described as the spring-board or point of departure for the special metaphysics of corporeal nature. *Second*, I also think that one cannot say that we need the concept of matter to demonstrate the objective reality of the categories. What Kant actually says in the passage from which Friedman draws this conclusion is the following:

When, for instance, we take the pure concepts of *relation*, we find, firstly, that in order to obtain something *permanent* in intuition corresponding to the concept of *substance*, and so to demonstrate the objective reality of this concept, we require an intuition in space (of matter).¹⁰⁰

What we require, according to Kant, is not the empirical *concept* of matter but an *intuition* in space of something permanent, i.e. of material objects. Only actual experience realizes the understanding. Friedman’s mistake here is similar to Allison’s reading of the Principle of Judgement I discussed in the previous chapter and where I argued that what we need in addition to the analogies of experience in order to make experience possible is not an additional *principle* but a *world* that is as this principle says it must be. *Third*, regarding Friedman’s claim that were it not for the solar system the empirical concept of matter would have no actual object corresponding to it, I have to confess: I find it most implausible. It seems to me that falling apples and billiard balls observed on earth suffice as examples for the objective reality of the empirical concept of matter. Moreover, I do not think that it is the case either that the solar system is “given to us in perception”. Instead, it would seem very far removed indeed from what we ordinarily perceive. In my

99 MFNS 4:534. The relevant passage is highly instructive and worth quoting in full: “For it lies generally beyond the horizon of our Reason, to comprehend original forces a priori as to their possibility; all natural philosophy consists rather in the reduction of given forces in appearance diverse, to a small number of forces and powers, adequate to the explanation of the effects of the former, but which reduction only extends to fundamental forces, beyond which our Reason cannot proceed. And thus, metaphysical research, behind what lies at the foundation of the empirical conception of matter, is only useful for the purpose of leading natural philosophy so far as is possible to the investigation of dynamical grounds of explanation, as these alone admit the hope of definite laws, and consequently of a true rational coherence of explanations.”

100 CopR, B 291 (italics original).

view this claim by Friedman shows how exaggerated his view of Kant's dependence on Newton is. *Fourth*, in response to Friedman's claim that the empirical concept of matter has one foot in the a priori basis of our empirical knowledge, I would contend the following: because the empirical and metaphysical concept of matter need to be as carefully distinguished as physical and metaphysical connections in the context of causality, I would maintain that no empirical concept, not even and including the special empirical concept of matter, can have a foot in the a priori basis for empirical knowledge. Instead, I think it must be said that the metaphysical concept of matter, constructed on the basis of the empirical concept, is itself part of that a priori basis.

Finally, I would like to turn to Friedman's view that it is not concrete examples but the a priori schematization of the categories in pure intuition what provides them with objective reality. According to my own understanding the schematization cannot by itself bestow objective reality on the pure forms of thought. Instead, it seems to me that it is just one, the merely formal condition of the process that bestows this objectivity, and that a material condition is necessarily also involved. The text of the *MFNS* contains a very instructive passage, which is particularly pertinent here and which, in my view, provides strong evidence for the correctness of such a reading. Friedman's interpretation amounts to the claim that the objectivity of the categories can be secured apart from their application to special empirical cases. This reading seems to me to be incompatible with what Kant says about the impossibility of applying the category of substance to thinking beings. Thus, in the observation to the Second Proposition of the *Metaphysical Foundations of Mechanics*, Kant contrasts the two highest empirical concepts of a thinking and an extended being (soul and matter) and explains why the category of substance cannot be applied to the former in the following way:

The ego, the universal correlate of apperception and itself merely a thought, indicates as a mere prefix, a thing of undefined signification, namely, the subject of all predicates without any condition distinguishing this presentation of the subject from a something generally, in short, substance, of which no conception of what it is is conveyed through this expression. On the contrary, the conception of a matter as substance is the conception of the movable in space.¹⁰¹

The reason that the category of substance is not applicable to thinking beings is that it is not possible to distinguish the undefined signification of the ego "from a something generally" and thereby to say what ("*kind* of thing") it is. Yet this distinction would have to be indicated by an empirical concept and it is therefore the inability to provide such an empirical concept what accounts for the inapplicability of the category of substance in

101 *MFNS*, (4:542).

this case. I think this passage shows clearly that the pure concepts or categories essentially depend on empirical concepts and that, contrary to Friedman's interpretation, the a priori schematization of the categories in pure intuition can not by itself secure them their objective reality.¹⁰²

Before I leave this critic I want to draw attention to the way Friedman's interpretation has led him in my view to mistranslate a central passage in the preface to the *MFNS*, proof, if it were needed, that all translation is interpretation. After Kant has claimed that the applicability of mathematics to the doctrine of body makes it necessary to introduce principles for the construction of concepts belonging to the possibility of matter in general, he makes a crucial observation which, in view of the importance of this passage, I would like to quote in full. Friedman translates:

Therefore a complete analysis of the concept of a matter in general will have to be taken as the basis and this is a task for pure philosophy, which, for this purpose, makes use of no particular experiences, but only that which it finds in the isolated (although intrinsically empirical) concept itself, in relation to the pure intuitions in space and time and in accordance with laws that already essentially attach to the concept of nature in general, and is therefore a genuine *metaphysic of corporeal nature*.¹⁰³

If the concept of matter is "intrinsically empirical", as Friedman translates, his interpretation would indeed appear to be supported and my own interpretation would be strongly challenged, if not even in serious difficulty.¹⁰⁴ For this would appear to make my claim, based on Kant's own express distinction, that we must distinguish between an empirical and a metaphysical concept of matter, untenable. If, according to Kant, the concept of matter is "intrinsically empirical", it could not have the double aspect it needs to have for my reading to be defensible. Yet when I checked the German original I found that what Friedman translates as

"that which it finds in the isolated (although intrinsically empirical) concept itself"

reads as follows in the original German

"was sie im abgesonderten (obzwar an sich empirischen) Begriffe selbst antrifft."

While it is true that the phrase "an sich empirisch" can, by itself and out of context, be translated as "intrinsically empirical", in view of its place and function in this sentence,

¹⁰² cf. Simon 1971, p. 285. See also "The category as such does not apply to an indeterminately given object but only to one of which we have a concept and about which we seek to know whether it does or does not exist outside the concept." (B 423).

¹⁰³ *MFNS*, 4:472. Italics in the original.

¹⁰⁴ I thank Stefan Storrie for pointing this out to me in the discussion of a paper based on this chapter.

this must, however, be considered as amounting to a mistranslation.¹⁰⁵ Based on the function of this phrase in this sentence, “an sich” must instead be understood in the sense of “eigentlich”¹⁰⁶ (its use in the parenthesis may be likened to the colloquial ‘An sich wollte ich in die Vorlesung gehen, aber ...’); thus we get: “[the concept of matter], although in actual fact empirical, ...”. And this makes a most important difference: i.e. that between the concept of matter being in fact and the concept of matter being essentially an empirical concept. I believe this translation to be the correct one because it is the only one which makes sense of the parenthesis and the sentence as a whole. Kant is conceding (“obzwar”) something here, namely that the concept of matter is an empirical concept, and he is doing so for the purpose of saying that, *although this concept is empirical*, it may also be regarded in a different way and as being non-empirical. And he adds the qualification ‘an sich’ to avoid the apparent contradiction between the claim ‘the concept of matter is empirical’ and the claim ‘the concept of matter may also be regarded as being non-empirical’. However, if the concession were that the concept of matter is an *intrinsically* or *essentially* empirical concept, how could this concession and the qualification ‘an sich’ possibly have this purpose? Indeed, what sense does it make, for example, to say: ‘Although humans are intrinsically and essentially social animals, they may also be regarded as non-social’? Far from removing an apparent contradiction, this would serve to strengthen the impression that there is one!

On the other hand, if the meaning is “although [the concept of matter is] *in actual fact* empirical”, it is clear, on well-familiar Kantian lines, how this phrase and this qualification can have this function: something that is in actual fact empirical may, for the purpose of and within a philosophical inquiry, be regarded in a different and non-empirical way; and this is so because of the possibility of using aspects of the empirical concept of matter as the basis for a non-empirical metaphysics of corporeal nature. Given the special meaning of *an sich* in Kant’s epistemology, to translate “an sich” as “intrinsic” is, of course, a mistake that is very easily made; but to translate it thus in this case is to forget, in general, that Kant is well capable of using the term in a non-special and colloquial sense, and of doing so for a particular and readily recognizable purpose. I will now turn to Buchdahl’s interpretation.

105 Of course, Friedman translates it in this way because that is the way his particular understanding of Kant’s matter theory leads him to translate it.

106 In German “eigentlich” and “an sich” are used synonymously. Both frequently precede concessions or describe a situation in which an initial impression or aspect is corrected or augmented, as in: “An sich sah er gesund aus, doch täuschte dieser Eindruck.” In the case in hand: although matter is an empirical concept, it is a very special empirical concept.

5.4. The weak interpretation of Kant's Theory of Matter: Buchdahl

We saw in the previous section on Friedman that the way one understands the Second Analogy is directly relevant to the reading one adopts for Kant's theory of matter. Thus, I would like to begin by re-stating as briefly as possible Buchdahl's interpretation of this central argument of the Analogies of Experience. We saw in chapter one that Buchdahl claims that the Second Analogy does not provide a justification for the necessity of empirical laws and, although he thinks that Kant's arguments against Hume's scepticism succeed, what this establishes is not the necessity of empirical laws, "not ... even in principle".¹⁰⁷ For Buchdahl the concept of causality merely provides the model of a causal nexus, i.e. all it does is to "reconnect[s] the 'broken' order of perceptions"¹⁰⁸ and the resulting sequence can be regarded as necessary only in the weak sense that would result if this sequence were grounded in absolute time. With this much I agreed. What I rejected was Buchdahl's assumption (shared by Guyer) that perceptions, when entering consciousness, do not possess an objective time order of their own and I pointed out against this view that it contradicts what Kant explicitly says. Moreover, while I agreed with Buchdahl that the transcendental laws need to be balanced by empirical facts, I did not agree that in the case of the Second Analogy this can be provided by merely contingent objective sequences, arguing instead that the existence of special causal laws in the empirical world is a presupposition of Kant's theory of knowledge. Thus while the Second Analogy must be given a weaker than weak interpretation, Kant nevertheless assumes that empirical laws have a real mind-independent existence of their own.¹⁰⁹ I argued that, although contingent and unanticipatable, they are for him the necessary material complement of the formal transcendental condition expressed by the causal principle of the pure understanding. I would now like to provide a concise exposition of Buchdahl's interpretation of the *MFNS*. In doing so I will initially focus exclusively on the more general aspects of Buchdahl's comprehensive account and return to some of its details in the critical assessment I shall undertake afterwards. However, the brief exposition to follow will suffice to give us a firm grasp of the way Buchdahl interprets the *MFNS*.

Buchdahl opens his article with the reminder that when interpreting Kant's epistemology we must always consider that there are different transcendental arguments which vary "in comparative logical tightness"¹¹⁰ (leaving it open, however, as to what

107 Buchdahl 1969, p. 655.

108 Buchdahl 1969, p. 663.

109 Baumanns calls them "Hoffnungssätze" (*principles of hope*). Cf. Baumanns 1997, p. 568.

110 Buchdahl 1986, p. 127.

kind of “deficiency” might be involved). He distinguishes between three different epistemological contexts in which Kant develops transcendental arguments: (1) nature in general, (2) particular physical nature and (3) the systematic unity of nature. He maintains that the different transcendental accounts of these three areas have often been confused and run together. In particular, he thinks that it is a mistake to assume that there is a direct relationship between the First Critique and the theoretical foundation of natural science and he sets himself the task of delineating these three fields to regain a proper understanding of Kant. When Buchdahl then asks rhetorically whether the axiomatic form of the *Metaphysical Foundations* does not suggest that Kant is trying to give proofs of certain laws and principles he provides the definitive negative answer that Kant is trying to do “nothing of the sort”.¹¹¹ Buchdahl reads the *MFNS* as an attempt to do no more than harmonize the foundations of physics with the a priori elements of experience in general:

Kant's chief objective was to elucidate the metaphysical hard core of some given branch of science (...), a hard core determinative of a certain scientific paradigm-situation that may or may not come to be seen as itself requiring modification.¹¹²

Given this restrictive way of understanding the purpose of the *MFNS* it comes as no surprise that Buchdahl regards the transcendental arguments involved as of the weakest kind. He even wonders whether the question of the validity of these arguments arises at all.¹¹³ In line with this reading, Buchdahl then goes on to maintain that, because they are based on an empirical concept, the analyses of the *MFNS* can at best deliver conceptual explications of the substructure underlying the physics of Kant's time, not a priori demonstrations of any kind. They are unable to do more than that because what is to be established by these demonstrations are not necessary features of experience in general but something which “concerns merely certain particular ‘facts’ of physics with the logical status of falsifiable hypotheses”.¹¹⁴

Buchdahl concludes his exposition by addressing the question as to whether Kant can be understood as a realist with regard to the force of gravity. He thinks that it is difficult to decide whether Kant was a realist in this respect or merely an instrumentalist, for there are arguments that would suggest both a positive and a negative answer to this question. On the one hand, Kant mentions the force of gravity in the Appendix to the *Transcendental Dialectic* as an example of the unity that can be introduced through general ideas. In this

111 *ibid.*, p. 140.

112 *ibid.*, p. 141.

113 *ibid.*

114 Buchdahl 1986, p. 142.

particular case he shows how, by assuming such a force as their common cause, we can unify the different laws governing the movements of planets and comets.¹¹⁵ This grants the force of gravity only a regulative status so that it could be no more than merely a theoretical entity that only serves to systematize our knowledge, rather than something with an objective existence of its own. The *MFNS*, on the other hand, seem to have the aim to secure a substantial realist status for the force of gravity. Because he thinks that the idea of realism is “so complex that any univocal appraisals are ... hardly possible”, Buchdahl does not want to commit himself to a definitive answer to this question.¹¹⁶ In the final analysis, Buchdahl sees Kant’s overall approach in the *MFNS* as “too elusive and tentative”¹¹⁷ to allow for any deductive derivations between this treatise and the First Critique so that his interpretation concludes on an aporetic note:

Interpreting his scheme in too general a way, so as to make it compatible with any and every development in physics, would rob it [...] much of its significance; just as insisting that it should lead in a determinate way to some definite physical predictions deprives his work of the type of metaphysical significance that we have tried to read into it.¹¹⁸

It is indeed curious that, according to Buchdahl, we have to “try” to read a metaphysical significance into the *MFNS*, despite their title. But it must be remembered that Buchdahl urges us not to take the title of Kant’s treatise at face value. Perceptive critics, therefore, have to try to walk a middle line between these two extremes and limit themselves to a general assessment of the philosophical significance of Kant’s approach in the *MFNS*. These, then, are the main assumptions that inform Buchdahl’s reading of the *Metaphysical Foundations*. I shall now turn to their assessment.

5.5. Reply to the weak interpretation of Kant’s Theory of Matter: Buchdahl

Before I proceed to comment on the points related above and, for the sake of providing the general background to what is to follow, I would first like to take a look at a fundamental claim of Buchdahl’s article that has wide implications. In support of his general interpretation of the *MFNS*, Buchdahl draws attention to the following passage from the end of the preface to the *MFNS*:

I have in this treatise followed the mathematical method, if not with all strictness (for which more time would have been necessary than I had to devote to it), at least imitatively, not in order, by a display of profundity, to procure a better reception for it, but because I believe such a system to be quite capable of it, and that perfection could certainly be

115 See CopR, B 690.

116 Buchdahl 1986, p. 155.

117 *ibid.*, p. 156.

118 *ibid.*, p. 156.

reached in time by a more adept hand, if ... mathematical investigators of nature should find it not unimportant to treat the metaphysical portion ... as a special fundamental part of general physics...¹¹⁹

Buchdahl reads this remark as providing a clear statement in Kant's own words of what the *MFNS* are essentially about. It shows, in his view, that the axiomatic form of the treatise is in fact something designed to "conceal" the less than axiomatic character of what is *actually* going on. This may seem an exaggeration of Buchdahl's reading for he does not exactly put things in this way. However, that this is indeed his view can be seen clearly from a statement in his earlier *Metaphysics and the Philosophy of Science*, where he says in a footnote to page 673 regarding the topic of our discussion: "Besides, if my interpretation ... is correct, Kant here conceals the 'looseness' of the relation between these transcendental principles and their application to physics proper."¹²⁰ Thus he glosses the content of the beginning of this text (Kant's reference to "imitation") in the following way: "So behind the deductive façade something quite different is obviously intended."¹²¹ Buchdahl maintains that the mathematical method is merely outwardly observed although the topic is in fact unsuitable for such rigorous treatment. However, I think we only have to read on to see that this interpretation is misguided: in the text quoted above Kant goes on to state (1) that the system of the *MFNS* is quite capable of mathematical rigour and he even claims (2) that perfection "could certainly be reached in time by a more adept hand".¹²² It seems to me that the last remark shows clearly that the mathematical method is not just a façade or pretence, which it would be if Kant had tried to lend a semblance of possibility to something he knew to be impossible. Against such a reading, which I find entirely unconvincing, I think that there is a genuine deduction going on. What is less than apodictic and less certain are not the propositions of the metaphysics of nature but their applicability. Yet, as we have already seen (1) that is not vouchsafed by reason and (2) it does not, in Kant's view, invalidate the result of the overall argument. Thus I think that, while correctly stating important provisos, Buchdahl is mistaken in the reason he provides for them. The lack of certainty is not introduced via a less than rigorous argument for the propositions of the metaphysics of corporeal nature but by the limitations that the *implementation* of its result is subject to. That these provisos do not suffice to deprive the result of its value can also be seen from the following. Although Kant concedes in the long remark concluding the *Metaphysical Foundations of Dynamics* that, when matter is conceived of as the result of opposing

119 *MFNS*, 4:478.

120 See Buchdahl 1969, p. 673.

121 Buchdahl 1986, p. 140.

122 *ibid.*, 4:478.

fundamental forces, which is of course the way he conceives it, “all means are wanting for the construction of this concept of matter”,¹²³ he nevertheless insists against those metaphysicians of nature who defend an atomistic theory of matter that they are unable to demonstrate that the view he favours is “something wholly incapable of any mathematical construction”.¹²⁴ Evidently a *qualified* mathematizability of the concept of matter suffices in Kant’s view as a licence to proceed with a dynamical theory of matter and he appears to be indeed right to claim so. The element of force is an essential, albeit opaque, element of matter. Yet what makes the concept of matter “luminous” in the limited way it is and amenable to theoretical access is derived from an a priori element which allows the application of mathematics, i.e. *degrees* of force (rather than inexplicable impenetrability as a brute fact). Thus while forces themselves may be opaque entities because they are unconstructable, the laws governing their efficacy need not be equally opaque because forces manifest themselves in space which is constructable.¹²⁵ And this is precisely what Kant’s analysis exclusively focuses on.

Contrary to Buchdahl’s claim that the *MFNS* offer nothing but a conceptual clarification of “a certain scientific paradigm situation”,¹²⁶ I think Kant’s aim was more ambitious than that. In the same way in which Kant did not think that the analysis of the general conditions of the possibility of experience offered in the First Critique would have to be modified, I do not think he thought that the *MFNS* would have to be rewritten at some future date, because the concept of matter had undergone changes in the meantime. Against this reading of the *MFNS* it seems to me that Kant rightly insists that there are concepts that are so fundamental that they stand above any paradigm dominant at a certain phase of the historical development of natural science and are therefore immune to any shift of paradigm.¹²⁷ I think that, for Kant, causality and matter are undoubtedly prime candidates for such concepts and I see this interpretation as supported by Kant’s description of the *MFNS* as a “fundamental part of general physics”.¹²⁸ Thus, while the *MFNS* are not concerned with the necessary features of *experience in general*, they *are* concerned with the necessary features of *outer* experience in general and, contrary to Buchdahl’s reading, not with special facts of physics which have the status of falsifiable hypotheses. What makes metaphysical foundations necessary is the need to

123 *MFNS*, 4:525.

124 *ibid.*, 4:498.

125 See § 38 of the Prolegomena where Kant develops this point with regard to the force of gravity.

126 Buchdahl 1986, p. 142.

127 How one thinks about this question decides whether one believes a metaphysics of nature to be possible or not.

128 *MFNS*, 4:478.

ground the science of corporeal nature or material objects. That matter exists is, for Kant, neither a special fact of physics nor a hypothesis that might be falsified at some future date. As the permanent in outer intuition, the existence of substance in space, i.e. matter, is shown in the anti-Cartesian Refutation of Idealism (where Kant claims that we could not have an empirical consciousness of our existence in time were it not for the fact that this consciousness stands in a relationship to something outside it) to have no lesser certainty than the evidence of self-consciousness.¹²⁹ Moreover, that nothing in the *MFNS* has the status of a mere hypothesis can also be seen from Kant's already quoted statement that the demonstrations he provides are valid independent of any success or non-success their empirical application may meet with (see 4:517). Buchdahl praises Kant for his "visionary anticipation" of modern views concerning the "theory ladenness of empirical concepts".¹³⁰ Yet if it is the case that *all* empirical concepts imply theoretical assumptions, this would also appear to imply that there can be no facts, including facts about matter and motion, unless there is a theory that ultimately grounds the concepts in which these facts have to be stated (even though we are usually unconcerned about the possibility of such a theory). Thus facts about matter and motion would not be storable unless a fundamental theory of matter and motion is possible, and I suggest that, in the *MFNS*, we see Kant trying to furnish just such a fundamental theory, a theory that, as Kant saw it, connects the data of experience to the "general laws of thought".¹³¹

Predictably, therefore, I also do not share Buchdahl's reluctance to call Kant a realist with regard to the existence of forces in nature. Difficult as the appraisal of the question as to whether Kant was a realist or an instrumentalist with regard to these forces undoubtedly is, I would still categorize Kant as a realist. Kant's realism is of course qualified as an empirical realism. But, as I have maintained throughout this dissertation, this realism is robust enough to fully merit this title. I am convinced of this because of the intimate link that exists between causality and the special forces of nature. We saw in the Second Analogy that real changes imply real forces.¹³² Thus if mind-independent

129 The crucial argument is: "The representation of something *permanent* in existence is not the same as *permanent representation*. For though the representation of [something permanent] may be very transitory and variable like all our other representations, not excepting those of matter, it yet refers to something permanent. This latter must therefore be an external thing distinct from all my representations, and its existence must be included in the *determination* of my own existence, constituting with it but a single experience such as would not take place even inwardly if it were not also at the same time, in part, outer." (CopR, B XLIII)

130 Buchdahl 1986, p. 142.

131 *MFNS*, 4:473. One can therefore agree with Schopenhauer when he observes that the concept of matter is the point at which the empirical part of our knowledge meets the pure or a priori part of it. See Schopenhauer, *Von der Materie*, chap. 24 of II, p. 359.

132 See "How anything can be altered, and how it should be possible that upon one state in a given moment an opposite state may follow in the next moment – of this we have not, *a priori*, the least conception.

special laws of nature imply the existence of special kinds of force, one cannot be a realist with regard to empirical laws and an instrumentalist with regard to real forces. I am therefore committed by my overall reading of Kant's epistemology to affirm the existence of real forces in Kant's epistemology. What I argued when reviewing Kitcher's interpretation of the Principle of Judgement in the last chapter is pertinent here also and bears repetition. After Kant has clarified the difference between the formal and material conditions for the possibility of empirical laws of nature in the Second Introduction to the Critique of Judgement, he says that the special laws of nature must have their own specific necessity. He then makes the important claim that, due to the constitution and limitations of our capacity for knowledge, "we entirely fail to understand this necessity"¹³³ and goes on to say that the necessity of the special laws of nature is "unfathomable"¹³⁴ for us. This seems to me to be a clear indication of the fact that Kant does not offer a reductionist analysis of natural necessity. I think that Buchdahl is therefore mistaken when he ties the necessity of empirical laws to their place in a system of such laws.¹³⁵ We can see from this that, for Kant, special causal laws are an irreducible ultimate fact. They allow no further elucidation or analysis and, to that extent, the fact of the existence of such laws shares in the "opacity" of real forces. I think that in Kant's epistemology physical necessity must be seen as a necessity *sui generis*, not as the result of imposition or injection or, to put it non-metaphorically, the result of some guarantee by the understanding or reason. On the contrary: it is underivable from the understanding or reason, only understood "where met with".¹³⁶ I keep coming back to this passage because it makes Kant's views on empirical necessity clearer than any other. Buchdahl, however, emphasizes the experimental, creative, tentative, and exploratory nature of Kant's argument in the *MFNS* to such an extent that it becomes difficult to see how he could possibly draw a line of demarcation between the type of transcendental argument pertaining to the context of systematicity and the type employed in the *MFNS*, for Kant claims that in this field we find both rigour and (potentially) perfection and completeness.

According to Buchdahl's interpretation, the *MFNS* are more like a didactic exercise that helps us to understand the first Critique, whereas I am convinced for the reasons

For that we require knowledge of actual forces, which can only be given empirically, as, for instance, of the moving forces, or what amounts to the same thing, of certain successive appearances, as motions, which indicate such forces." (CopR, B 252).

133 CoJ, Second Introduction, B XXXIII.

134 *ibid.*, B XXXIV.

135 See Buchdahl, *Lawlikeness*, p. 136, where Buchdahl says of empirical laws: "Evidently, this ties their necessitarian status to scientific systematisation."

136 See B 798.

given that they are more than that and were seen by Kant as more than that: they are an integral part of the overall argument of the transcendental philosophy. This reading alone can make sense of Kant's claim that the *MFNS* are indispensable. If it could not be shown what Kant thought he had shown in the *MFNS*, the result of the Critique would not just be harder to understand: it would be thrown into very serious doubt. If Buchdahl's deflationary reading were correct the considerations and arguments of the *MFNS* would only try to lend plausibility to Kant's metaphysical construction of the concept of matter. However, I think we have seen that such a reading faces a number of serious challenges.

Finally, then, it appears to me that Buchdahl's interpretation is at odds with the textual evidence. He started out his article by emphasizing the need to draw clear demarcations between the three different types of transcendental arguments we find in Kant. However, it seems to me that the interpretation of the *MFNS* he advocates has deprived itself of the means of drawing a line of demarcation between itself and the interpretation of the systematicity of nature. By assuming that the *MFNS* are concerned with facts of physical science and falsifiable hypotheses, Buchdahl ties them so closely to empirical questions of science that they cannot function as foundations for science. Buchdahl defines the projective activity of reason as the "procedure of 'injecting' what we want to regard as 'certain'".¹³⁷ However, in Buchdahl's reading it is not clear what it is exactly that distinguishes the propositions of the *MFNS* from things we want to regard as certain. Whereas I think the difference consists in the fact that the propositions of the *MFNS* set out not what we *want* to regard as certain, but what we *must* presuppose *iff* we want to assume that a science of physical objects or corporeal nature is to be possible. Buchdahl seems to think that just because the analysis offered in the *MFNS* is conditional in this way, its result cannot acquire the apodicticity that Kant claims it must have, if it is to fulfil the function required of it. Buchdahl can thus be said to make a mistake with regard to matter that is analogous to Hume's mistake with regard to causality whereby he "was in error in inferring from the contingency of our determination *in accordance with the law* the contingency of the *law* itself".¹³⁸ Matter is partly an empirical, contingent concept, but it also permits an a priori determination that is not as contingent as its origin. It is this determination that Kant develops in the *MFNS*. What ultimately demonstrates the fruitfulness of the First Critique, however, is not just the metaphysics of

137 MPS, p. 561, fn 2.

138 CopR, B 794.

nature. It is the applicability of this metaphysics in empirical science. At the end of chapter 3 of his *Kant and the exact Sciences*, Friedman proposes an understanding of the relationship between science and its metaphysical foundations that is much closer to the one I think we should adopt than the one Friedman defends in his article discussed above. I would like to finish by commending it:

There can be no a priori guarantee, however, that the proper object of pure understanding, namely, objective experience, is in fact constructable. In the end, only the utterly remarkable success of Newton's *Principia* itself shows that – and how – objectivity is realized.¹³⁹

6. Conclusion

Chapter one claimed that, although Kant only wants to prove that the Second Analogy is a transcendental formal principle, he nevertheless holds that its applicability in experience depends on the contingent fact that there are some changes in the world that, in fact, obey special causal laws, and this went beyond what the weak interpretation of the Second Analogy is prepared to accept, for it severs the link between the necessity and regularity aspect of natural laws. Likewise, while we can see that the a priori metaphysical concept of matter forms part of the formal conditions for the possibility of an intelligible outer experience, this alone does not furnish a guarantee that we are entitled to expect that the empirical world will always present us with phenomena that can be made sense of with the help of this concept. Yet, only to the extent that this contingent condition is fulfilled is an intelligible experience of outer objects possible (witness our failure to understand the double slits experiment of quantum mechanics). In the same way in which we can distinguish between the necessity and regularity aspects of empirical laws, the formal and the material side of the special laws of nature, we can also distinguish between the metaphysical and the complementary empirical concept of matter. In this chapter we have seen that the underdetermination of the possibility of experience by the formal transcendental conditions must be overcome by an empirically cognizable causal order of the world as well as by the fact that it contains objects which permit the use of the category of substance and its “spatial realization”, i.e. the metaphysical concept of matter.

139 Friedman 1992, p. 164.

Chapter 5

Conclusion: One World and its Substrate

If science is to be advanced, all difficulties must be laid open, and we must even search for those that are hidden, for every difficulty calls for a remedy, which cannot be discovered without science gaining either in extent or in exactness; and thus even obstacles become means of increasing the thoroughness of science. On the other hand, if the difficulties are intentionally concealed, or merely removed by palliatives, then sooner or later they burst out into incurable mischiefs, which bring science to ruin in an absolute scepticism.

Critique of practical Reason, A 185

1. Introduction

In each of the previous four chapters I have focused on specific problems of interpretation and explored the way in which my own understanding of these problems has supported and helped to articulate the No-Priority thesis. In this final chapter I wish to discuss this thesis more freely by examining the findings and results of this dissertation and their implications in a less formal way. Thus, my aim in this final chapter shall not be to offer an additional argument in defence of my thesis. This work I now consider to have been done.

To say that the correct interpretation of Kant's Transcendental Idealism is contentious would be an understatement. The interpretations of Kant's theory of knowledge vary so greatly that anybody who has any acquaintance with them will agree with Allais that it sometimes seems hard to believe that they are all interpretations of the same philosophical theory "put forward by the same philosopher, largely in one book."¹ The topic of the correct interpretation of Kant's idealism is such a huge and complex one that it hardly needs saying that it would be impossible to give – and thus presumptuous to attempt to offer – an account of even the more recent debate on this perennial topic of post-Kantian philosophy. However, what can and perhaps ought be done is the following: to indicate broadly what difference the NPT, if accepted, makes to our overall understanding of Kant's particular version of idealism. However, before I address this question, I would like *firstly* to

1 Allais 2004, p. 655.

recapitulate briefly the main lines of argument of the preceding four chapters and *secondly* to explain why the NPT firmly rules out what has been called the “Formgebungsmanufaktur-Interpretation”,² an interpretation of Kant’s epistemology that remains widespread, and, according to which, there is supposed to be a sense in which it is true to say that, according to Transcendental Idealism, “mind makes nature”.

2. Recapitulation of the central arguments for the NPT

Through a lengthy sequence of more general expositions, close textual analyses, detailed assessments of some of the better known secondary literature and my own reflections on all of these, we have now, after four chapters, reached a point that allows and calls for a synoptic overview and a brief retracing of the main steps the argument in support of the NPT has taken.

In the *opening chapter* I analysed Kant’s difficult and much-disputed Second Analogy of Experience. I suggested that we categorize the existing interpretations into three different types: a strong, a weak and what I called a “weaker-than-weak” reading. This chapter claimed that, although Kant only wants to prove that the principle of causality is a transcendental formal principle, it can nevertheless be shown that he holds that the applicability of the causal principle in experience depends on the fact that there are changes in the world that as a matter of mind-independent contingent fact obey special causal laws. And this goes beyond what the weak interpretation of the Second Analogy is prepared to accept, because it severs the – in my view essential – link between the necessity and regularity aspect of natural laws. In particular, I showed that Kant’s famous example of a ship moving down a stream can be read in such a way that it does not imply any commitment to assumptions that would go beyond a weaker-than-weak interpretation of the Second Analogy. I think that all Kant wants to show is that, without the presupposition that the moments of time follow each other of necessity, objective knowledge of a changing world would not be conceivable. According to Kant the principles of the understanding reach their full determination only through and in their application

2 This view goes back to Herder. For an introduction to this topic, see Baumanns 1997, p. 9f. Baumanns describes the FGM-interpretation succinctly as a theory of “object production out of material of sensation by a transcendental hand” (“Gegenstandsanzfertigung aus Empfindungsstoff von transzendentaler Hand”, *ibid.*, p. 10). Goethe, Herder’s contemporary, typified this early misunderstanding when he wrote in the year before his death: “I thank the critical and idealistic philosophy for drawing my attention to myself, that is an immense gain; however, it never reaches the object, which we have to concede as much as common sense has to in order to have the joy of life in our unchanging relationship to it.” Goethe to Schultz, 17th September 1831.

to the material of knowledge; without it they are incomplete as principles. He says that only through this application do the principles of the understanding reach their “logical clarity” (CopR, B 241). An important implication of this reading of the principles of the understanding is their “weakness”: they can establish less than what is generally thought to be guaranteed by them.

Chapter two supported and developed the No-Priority thesis further by examining Kant's arguments for the need of material transcendental conditions as he advances them in the Appendix to the Transcendental Dialectic of the First Critique. Kant repeatedly refers to the fact that the formal conditions for the possibility of knowledge developed in the Analytic of Concepts and Principles are only necessary and not sufficient conditions for the possibility of knowledge. In this text he addresses this issue for the first time in a comprehensive way. In the Appendix Kant claims that the principles of the understanding, of which he had said that they are the source of all truth (B 296), need an empirical criterion of truth (B 675) as their necessary complement. Kant claims that the criterion required is furnished by the systematicity of knowledge. He crucially maintains that without such systematicity our knowledge is “defective” (B 674), not just in the sense that we would like our knowledge to be more comprehensive, but in the sense that it is deficient as knowledge. This chapter shows that the Transcendental Dialectic is not just a destructive exercise, as Strawson saw it, but that the Appendix, this centrally important, yet much-neglected section of the First Critique, makes its own positive contribution to the Transcendental Logic as a whole.

The *third chapter* supported my thesis by examining Kant's arguments for material transcendental conditions as he articulates them in the Critique of Judgement. We saw Kant resume the discussion of material transcendental conditions under a new terminology: the Principle of Reason became the Principle of Judgement. Kant now defines systematicity as the purposiveness of nature for our cognitive faculties. In the context of the principle of purposiveness, I again distinguished three rival interpretations: a strong objectivist or metaphysical interpretation, a weak heuristic or methodological interpretation and a compatibilist reading: We saw that the strong (I) and weak (II) interpretations claim that (I) there is one system of all concepts describing the things of the world and in this system every empirical concept has its or at least a place or that (II) systematicity is merely an indispensable heuristic or methodological principle needed to guide our scientific searching and to ease the burden of our memories, and this means that the belief that it has an objective equivalent in the structure of the empirical world is an illusion. Against these two interpretations the No-Priority thesis manifested itself in

the claim that (III) it is possible to gain empirical knowledge of and find scientific explanations for the objects and events of the empirical world only if, and to the contingent extent that, the empirical world has a mind-independent systematic structure of its own. I argued in this chapter that the principle of purposiveness, like that of causality, does not say anything about the way the empirical world actually is. It only says something about what we need to assume if we want to be able to objectify and understand the empirical world. This chapter tried to demonstrate that only the compatibilist interpretation, which is implied by the NPT, considers the material transcendental conditions adequately, for it alone takes seriously the fact that the conditions for the possibility of empirical knowledge for Kant comprise both formal transcendental conditions and material transcendental conditions, i.e. CPEK = FTC + MTC.

In the *fourth chapter* I examined Kant's theory of matter. I maintained in that context we need to distinguish between a metaphysical and an empirical concept of matter. I defended the view that the metaphysical concept of matter is a highly etiolated concept³ and that it therefore stands in need of complementation. This again strongly suggested that the dependence between the formal conditions of empirical knowledge and their material counterpart is mutual and essential. The central claim defended in this chapter was that the a priori framework of the mind does not impose substantiality on appearances any more than it guarantees causal connections.

Looking back over the last four chapters we can now see that we have examined the manifestations of one problem in three related areas. In each chapter (with the exception of chapter 2, which has the same subject matter as chapter three and serves in a way as a prolegomenon to chapter three), we have examined an issue relating to the relationship between the transcendental and the empirical level of knowledge and found them to be essentially interdependent and mutually implicative.

3. The "Formgebungsmanufaktur" interpretation and the way in which the No-Priority thesis rules it out

My interpretation of Kant's theory of knowledge derives much of its interest from its contrast to a widely accepted view which it stands opposed to and thoroughly challenges. This is the view that Kant assumes that the formal conditions for the possibility of em-

3 To this extent, Kant's concept of matter shows a parallel to Aristotle's *hule*. See Gadamer: "All talk of a specific matter, which certainly occurs in Aristotle in descriptive contexts, refers to something existing, which obviously has its own determination (*eidos*) and does not refer to the pure *hule* itself, which is defined by its indeterminacy." (Gadamer 1973, p. 96).

irical knowledge can, via some process of imposition or injection, somehow guarantee the basic structure of the empirical world. We encountered this view in every chapter in a characteristic form. We saw how it informs Friedman's and ultimately also Longuenesse's reading (if somewhat less so) of the Second Analogy, Wartenburg's interpretation of the Appendix to the Transcendental Dialectic, Abela's and Kitcher's understanding of the Principle of Judgement as well as Plaass's and Friedman's interpretation of Kant's theory of matter. This way of understanding Kant's epistemology has a long history. According to Baumanns it has "bewitched" the interpretation of Kant from the beginning. Such a reading of Kant is also implicit, for example, in Jonathan Lear's view that "the Kantian synthetic unity of apperception stands to the object of judgement" in a "...'master-slave' relation...".⁴ Most recently Philip Kitcher sees Kant's proofs of the principles of the understanding as "accounts of how our minds tacitly deploy general principles in building up a world of spatio-temporally connected objects and events."⁵

Against this interpretation the No-priority thesis claims that the forms of empirical knowledge depend for their applicability on the mind-independent structure of the empirical world. I maintained throughout this dissertation that in Kant's epistemology the material conditions of knowledge are raised to a transcendental status: they too determine the very possibility of knowledge, they not only realize the formal transcendental conditions, but make them what they are "meant to be", if such teleological language be allowed. The view that gives the mind dominance over its objects lends itself to a strong idealist interpretation because, in most forms of idealism, mind is allocated priority over matter. The critics that defend or, indeed in many cases, simply lend themselves to the FGM-interpretation are countless.⁶ Rather than risking tiring the reader excessively I would now like to illustrate the FGM by reference to a single and especially worthy exponent: Henry Allison.

4 Lear, 1998, p. 300. This interpretation is still very widespread and dominant. In his introduction to metaphysics, Michael Loux says the following about Kant's epistemology: "The sensory data are the effects on our subjective sense faculties of a world external to those faculties. The data get structured or organised by way of the innate concepts, and the result is an object of knowledge. So what we call an object of knowledge is not a thing external to and independent of our cognitive machinery; it is the product of the application of innate conceptual structures to the subjective states of our sensory faculties." Loux 1998, p. 6.

5 Kitcher 2006, p. 50. In: Guyer 2006.

6 To mention but a few: Adickes, Heimsoeth, Kemp-Smith, Wagner, Paton, Heidemann, Grayeff, Strawson, Guyer, Cassam, Walker, Abela, Hoppe, Friedman, Pluhar, Kitcher, Longuenesse, and Aschenbrenner. Outside Kant scholarship, this interpretation is all-pervasive. One finds it in Russell, Blackburn, Loux, Lowe, and many other authors.

3.1. Allison on unity and objectivity

The text I would like to analyse is taken from Allison's assessment of the *Lovejoy-Strawson Critique* of the Second Analogy where he quotes the following passage from the A deduction:

... since we have to deal only with the manifold of our representations, and since that x (the object) which corresponds to them is nothing to us – being, as it is, something that has to be distinct from all our representations – the unity which the object makes necessary can be nothing else than the formal unity of consciousness in the synthesis of the manifold of representations. (A 105)

Allison concludes his discussion of this passage with the interpretative claim that since “the unity of the object is reduced to the unity of representations, its locus must be in the representing consciousness.”⁷ In my view, this interpretation turns Kant from a transcendental into a subjective idealist.⁸ According to Allison's reading of this passage, objectivity is grounded in the subject.⁹ However, I think it is a misunderstanding to assume that Kant reduces the object to representations. I think that Kant makes clear how, although in a sense “confined” to our representations, we can nevertheless have objective knowledge. He thinks that this is possible because we have an understanding endowed with categories that transmit into our representations the unity and necessity that is required for them to stand in a relation of reference to an object, which is why the necessity the categories bring into our representations contributes to *knowledge*.

Allison, who sees the locus of the object in the representing consciousness, has no answer to the question as to why unity of consciousness yields *knowledge*. The link to something outside the representations has been lost and the idea of knowledge has been re-interpreted along, in my view, entirely un-Kantian subjective-idealist lines. Allison then goes on to suspect that Kant is “guilty of confusing the genuine insight that consciousness necessarily involves unity” with the different and “apparently absurd claim”¹⁰ that there is a special kind of necessary unity. I think that when referring to the object of knowledge as the element which confers necessity a priori (A 104/5) Kant, instead of “talking non-sense”, as Allison alleges, hands us the key to a proper understanding of the deduction (and by implication also of the Second Analogy). Kant explains here how it is thinkable that the universality and apriority of the categories contribute to *knowledge*: they do so because they transmit into a particular piece of knowledge a necessity that

7 p. 371.

8 Allison talks of “Kant's subjective or transcendental turn” (p. 371) Höhle, who also interprets Kant in this way, gives him the ‘honorary title’ of “the most sophisticated subjective Idealist”. Cf. Höhle, p. 206.

9 For a similar reading of Kant, see also Carl, *Das Subjektive als Bedingung des Objektiven*. In: Stolzenberg 2007, pp. 113 – 129.

10 Allison 1971, p. 371.

originates in the mind-independent object of this knowledge. By regarding it as an "absurd claim" of Kant's that there is a special kind of necessary unity, Allison loses sight of the fact that what makes the necessary unity of consciousness special is that it is the precondition for its correspondence to an object, by which, as Kant says as clearly as one could possibly wish, our apprehension is "bound down" and which accounts for the "guidedness" of our experience, guaranteeing that it is not "haphazard". Kant does not move from the recognition of the necessity of unity for the possibility of consciousness to the idea of a necessary unity which can ground objectivity. His starting point is the unity of the object of knowledge.¹¹ The unity of the object explains why the unity of consciousness is necessary for knowledge. The unity of consciousness is secondary and merely ancillary. Correspondence to this object alone can be called knowledge. Allison reverses this clear order. His ultimately subjectivist interpretation, according to which objectivity is grounded in the subject, ignores the fact that the conditions for the possibility of experience are by no means *entirely*, or indeed, primarily subjective. Allison's interpretation of Kant thus bears a striking resemblance to Natorp's Neo-Kantian interpretation of Plato's theory of knowledge of which Natorp says that "...there is no longer such a thing as a true object that is not constituted within the concept of knowledge, in accordance with the law proper to knowledge. ... The law peculiar to consciousness is what generates the object in the first place, namely the object of consciousness."¹²

Indispensable as it is for and characteristic of any kind of knowledge, the formal unity of consciousness is one that has to be "balanced by facts", to use a phrase of Buchdahl's, i.e. its consummation, as it were, has to be allowed for by the material element of knowledge. For long stretches of the development of its complex argument, the Critique of Pure Reason withdraws from the objects of knowledge and inquires into the conditions of the possibility of gaining knowledge of them. However, it is essential to acknowledge that all knowledge wants to be knowledge of something, which is why, no matter how far it retreats from the objects of knowledge, no epistemological investigation can afford to lose the relation to them completely. Adorno puts this point in relation to Kant well when he observes: "Behind this passive element is hidden, thought not

11 This has, in my view, been most persuasively argued by Baummanns. His *Konvertibilitätsthese* says the following: "What alone qualifies the unity of consciousness to a principle that makes knowledge a priori possible is its a priori correlation to the object in general, the transcendental object = X." (Baumanns 1997, p. 440).

12 Natorp 2004, p. 76. This in spite of Natorp's protestations that he is not defending a species of subjective idealism, which I cannot consider here.

elucidated by Kant, the dependency of the seemingly independent, the pure apperception, on this however indeterminate objective element, which in Kant's system has escaped into the doctrine of the experience-transcendent thing in itself. No objectivity of thought as an act would be possible at all, if thought were not in itself, according to its essence, always also bound to that which in itself is not thought."¹³

In the opening lines to the third section of the System of the Principles of Pure Understanding Kant makes the following observation:

Even natural laws, viewed as principles of the empirical employment of understanding, carry with them an expression of necessity, and so contain at least the suggestion of a determination from grounds which are valid *a priori* and antecedently to all experience.¹⁴

As in the text quoted above Kant also talks here about grounds which are valid "a priori" and, again, he is not referring to subjective grounds, but to those on the side of the object: the grounds that determine the necessity of natural laws (as opposed to the laws of the understanding). The very idea of knowledge dissipates if *all* necessity is derived from the subject. In such an account it is hard to see how the extra-mental object could assert its independence of the forms of knowing. A complete description of the conditions for the possibility of experience and empirical knowledge must include what one might call a "material a priori", or, as I have argued throughout and will say one last time: the conditions for the possibility of empirical knowledge comprise both formal and material conditions, i.e. CPEK = FCPK and MCPK.

3.2. The NPT is incompatible with the FGM interpretation

We have seen in each of the preceding chapters that the subject of empirical knowledge is so dependent on the material conditions for the possibility of knowledge – on the contingent fact that there are special laws of nature, the unanticipatable fact that nature has a degree of mind-independent systematic order and the contingent fact that the objects of nature behave like substances – that it is just not imaginable how the mind could possibly assume the position of power it would need to occupy in order to be able to impose its forms onto an amorphous material and thus "produce" the empirically real world. Continuous with this argument is also the observation that Kant sometimes talks about the forms of knowledge in a clearly pejorative way. Thus he says about space that it would be "nothing" (B 349) were it not for the objects in it. And in the Prolegomena he

¹³ "Anmerkungen zum philosophischen Denken", p. 13. In: *Stichworte*.

¹⁴ CopR, B 198.

calls the table of categories a completely useless “miserable list of names”¹⁵ (an *elendes Namensregister*) unless we have an explanation for their role in experience. This again underlines the fact that, in complete contrast to Platonic forms, in and by themselves, these a priori forms are nothing. They become what they essentially are only in and through their application. The FGM interpretation misunderstands Kant’s much-quoted claim that “the order and regularity in the appearances, which we entitle *nature*, we ourselves introduce” (A 125) and that we could not find order in appearances “had not we ourselves, or the nature of our mind” (ibid.) introduced it. They fail to notice that the order Kant is referring to here is a purely formal, not a material order. It is not the order he refers to in the Appendix to the Transcendental Dialectic when he asks “whether there is anything distinct from the world, which contains the ground of the order of the world” (B 724), answering “that there *undoubtedly* is”.¹⁶ The order referred to here is the material order embodied in the countless special laws governing the different aspects of nature which science tries to formulate. Critics advocating or simply uncritically adopting the prevalent FGM-interpretation thus confuse the formal transcendental order of our experience, which does not interfere with the empirical regularities given in experience, with the imposition of an empirical order.

That the NPT is clearly incompatible with the FGM – i.e. that $\neg\Diamond(NPT \wedge FGM)$ – is therefore indeed obvious and this issue need not be pursued any further here through additional argument. What is much less clear, and the final thing I shall positively attempt to determine, albeit tentatively and schematically in this dissertation, is an answer to the question: what account of Kant’s ‘so-called’ idealism¹⁷ is implied by the NPT?

4. What follows, if the NPT is accepted, for the understanding of Transcendental Idealism?

If we accept the NPT, what follows from this commitment for the debate concerning the correct interpretation of Kant’s idealism? In this section I shall briefly explore what the implications of my thesis, if accepted, are with respect to this long-standing debate. In general, this debate has been dominated by two opposing interpretations: the Two-Worlds-View (TWV) and the Two-Aspects-View (TAV). According to the TWV, which reads Kant’s distinction between appearances and things in themselves as an ontological

15 Proleg., 4:324.

16 B 724, original emphasis.

17 Proleg., A 207.

distinction, things in themselves reside in a world of their own separate from the spatiotemporal world. Against this view, the TAV claims that the distinction between appearances and things in themselves must not be understood in an ontological but merely in a methodological way. Thus, Allison, a prominent advocate of this view, wants Kant's transcendental idealism to be understood as "a methodology or standpoint rather than as a substantive metaphysical doctrine".¹⁸ What I can offer in this section is no more than the sketch of an outline for an argument. I shall do this by undertaking the following three tasks:

- T1. to show that the NPT is incompatible with the TWV;
- T2. to consider whether the NPT implies the TAV and argue that it does not;
- T3. to indicate how there can be room for a third general account of Kant's idealism.

I shall address these three tasks in turn. I will first deal with the question as to whether the NPT is compatible with the TWV and – to anticipate my result – if not, why not?

4.1. Is the NPT compatible with the Two-Worlds-View?

We have seen in the previous section that the NPT is incompatible with the FGM interpretation. Historically, critics who have defended the FGM interpretation have also been advocates of the Two-Worlds-View (TWV) of Kant's idealism, and vice versa. I will not go into exactly how these two views have been associated, but I think it is fairly obvious why this might be so: if the empirical world is to be understood as the product of the activity of knowing minds on an otherwise formless material, and if, as Kant's commitment to the possibility of things in themselves implies, there may be things that are real but not identical with the things of the empirical world, then these things must be conceived as being residents of a world that is entirely separate from the empirical one – and perhaps also as being the source of the – to us – formless material that we turn into the empirical world. The most radical version of the Two-Worlds-View-interpretation has to be that of Adickes. According to this early critic, in Kant's idealism the empirical world is the result of the affection of a noumenal self by noumenal objects.¹⁹ What I said against the FGM interpretation must also be repeated against this interpretation: according to the NPT the link between the knowing mind and the world is so close in Kant's theory of knowledge

¹⁸ Allison 2004, p. xv.

¹⁹ See Adickes, p. 36: "By the things in themselves only our noumenal self [*unser Ich an sich*, MW] can be affected..."

that, contrary to the TWV, this independent world cannot be entirely separate from the mind. The degree of isolation from the world that the transcendental ego would need to have for there to be room for “another” world, in addition to the one we cognize, is simply not there.²⁰ Kant’s transcendental self is so closely interwoven with the world that self and world just cannot be prised apart. The transcendental forms of the mind merely contribute to our knowledge of this world, they do not constitute what is to be known by them. The whole thrust of Kant’s epistemology is anti-Cartesian. The world is one and the subject is a distinct but integral and inseparable part of it. If the a priori forms of knowledge are essentially related to the structure of the world, as I have argued they are for Kant, there just is no conceptual room to entertain the thought of any dissociation between the self and its world. Yet the conceivability of such a dissociation would appear to be required for the very idea of another, second world to make sense. Here again we find a similarity to Natorp’s interpretation of Plato’s theory of ideas, this time one making a point we can approve of. According to Natorp, one of the major benefits of his interpretation is that it “allows us to realize that the forms are essentially related to nature, thus avoiding the danger of a dissociation between a world of forms and a world of sensible phenomena”.²¹

It seems to me that the Two-Worlds-View fails to appreciate the empirical nature of Kant’s realism which, in the view defended in this dissertation, is essential to it. That Kant was not interested in any realism other than an empirical realism can be seen from his solution to the fourth paralogism of rational psychology where he describes transcendental idealism as the only “refuge” (*Zuflucht*)²² remaining open to us if we want to avoid empirical idealism, which he saw as an implication of transcendental realism. Reduced to its essential steps, Kant’s argument against transcendental realism is the following: transcendental realism, if true, leads to empirical idealism (because as Kant puts it in § 9 of the Prolegomena, a thing’s “properties cannot migrate over into my power of representation”).²³ Empirical idealism is false, as Kant assumes to have proven in the Refutation of Idealism. Therefore, transcendental realism is false. A fuller treatment of the nature of Kant’s idealism than is possible in this chapter would have to assess this argument. Briefly, transcendental realism starts with the belief in an external world but then it makes it difficult to maintain this by conceiving of the mind as an internal theatre in which sensations merely represent the real objects that have become hidden behind these sensations as behind a veil, whereas in Kant’s transcendental idealism the objects of

20 According to Adickes’s interpretation, a thing in itself corresponds to every empirical object. See p. 27.

21 V. Politis, *Invoking the Greeks on the relation between Thought and Reality*, p. 18.

22 CopR, A 378. Thus it would seem fair to say that there is a sense in which Kant was a “reluctant” idealist.

23 Proleg., 4:282.

outer experience are immediately present to our minds. Kant's claim is that unless we regard objects as appearances, we cannot claim that *they*, as opposed to their effects, are truly present to our minds.

The Two-Words-View interpretation stands opposed to the Two-Aspects-View, i.e. the view which holds that there are no grounds for assuming two worlds, one of appearances and another of things in themselves, and that the distinction between these is not an ontological one but merely methodological. Given that the NPT is incompatible with the Two-Worlds-View,²⁴ should we therefore infer that the kind of idealism in Kant implied by the NPT is some variety of this Two-Aspects-View? I think we should not infer this. Setting out my reasons for this view will be my task in the next section.

4.2. The NPT does not imply the Two-Aspects-View

The *first* problem for the TAV comes in the form of the following question: if the objects of our experience have a way they are in themselves and if there is ultimately only one set of objects, then it must be true that "our experience is some kind of apprehension of things in themselves"?²⁵ Yet Kant repeatedly explicitly denies this. We are not supposed to apprehend things in themselves in any way whatsoever. Thus he says: "Even if ... appearance could become completely transparent to us, such knowledge would remain *toto coelo* different from knowledge of the object in itself." (B 62) That the knowledge of appearances and things in themselves is said to be "*toto coelo*" (*himmelweit*) different, in my view, implies that there is no, not even a very limited sense, in which it could be true to say that we know things in themselves. Thus it would appear that the distinction between appearances and things in themselves is stronger than the TAV suggests and Langton seems justified in her claim that not knowing the things as they are in themselves is for Kant "a case for mourning".²⁶

24 According to Pippin this view makes „a confusing shambles of much of Kant's transcendental theory“. Pippin 1982, p. 204.

25 Allais 2004, p. 666. For the exposition of this section I have found section III of Allais' article particularly helpful. She gives a very clear and succinct summary of the problems faced by the TAV, more detailed than I can do this here. See pp. 665-669.

26 Langton, p. 14. This critic reads the distinction between appearances and things in themselves as an ontological one between the intrinsic unknowable and extrinsic knowable properties of substances. I agree with Langton that the Two-Aspects-View does not offer a satisfactory interpretation of Kant's central doctrine of Transcendental Idealism. This chapter does not have the scope for a discussion of Langton's interpretation of Kant's idealism, yet it seems to me that the motto of her *Kantian Humility* "We have no insight whatsoever into the intrinsic nature of things" (B 333) already bodes ill for the study to follow. The view she quotes is rejected by Kant immediately, for the full context is: "If by the complaints – *that we have no insight whatsoever into the inner [nature] of things* – it be meant that we cannot conceive by pure understanding what the things which appear to us may be in themselves, they are entirely illegitimate and unreasonable."

Second, Kant is committed to the real existence of a mind-independent reality. This can be seen from the above-quoted question from the Appendix to the Transcendental Dialectic, i.e. “whether there is anything distinct from the world, which contains the ground of the order of the world” (B 724), to which Kant’s emphatic answer is that “there *undoubtedly* is”.²⁷

Third, if references to appearances and things in themselves are only references to two different ways of considering the same objects, it becomes difficult for the TAV to explain the way in which Kant is an idealist. How, for example, can the TAV explain Kant’s claim in the proof of the Second Analogy of Experience that the appearances merely “signify” (B 235) an object? For A and B to stand in a relation of signification it would seem necessary that they are not identical. Related to this problem is another problem arising from what Kant says in the Amphiboly chapter of the *Critique* where he explains: “It is certainly startling to hear that a thing is to be taken as consisting wholly of relations. Such a thing is, however, mere appearance, and cannot be thought through pure categories; what it itself consists in is the mere relation of something in general to the senses.” (B 341) Kant says here that appearances have no non-phenomenal core. The appearances consist of *nothing but* outer relations.²⁸ Again, it seems difficult to make this text consistent with the TAV for, here, Kant emphasizes again that appearances are *totaliter aliter* from things in themselves.

Fourth, when Allison claims that it would be a mistake to assume “that Kant owes us, yet cannot provide, some ultimate metaphysical story about affection: a God’s-eye account of what it is that *really* supplies the matter of cognition”,²⁹ I think he overlooks what seems to me a crucially important passage from the Amphiboly chapter:

The relation of sensibility to an object and what the transcendental ground of this [objective] unity may be, are matters undoubtedly so deeply concealed that we, who after all know even ourselves only through inner sense and therefore as appearance, can never be justified in treating sensibility as being a suitable instrument of investigation for discovering anything save always still other appearances – eager as we yet are to explore their non-sensible cause. (B 334)

It seems to me that Kant is doing here exactly what Allison thinks would be a mistake to ascribe to him: he tells us that he would like to have knowledge of the way our sensibility is related to an object and that he would like to have knowledge of the ground of this relationship or unity, yet that this knowledge is unattainable for us. I suggest we take this text at face value. Kant is not engaged in obfuscation but means exactly what he says.

²⁷ B 724, original emphasis.

²⁸ See the analysis of this passage in Patt, 1991, p. 155f.

²⁹ Allison 2004, p. 73.

However, according to Allison's anodyne TAV this cannot be so: he cannot deplore our genuine ignorance concerning this aspect of our epistemic relationship to the world.

This brings me to my *fifth* point. Another advocate of the TAV is Bird. According to this critic the *Critique* points us towards a "modest and sober exploration of the structure of immanent experience." According to Bird's Kant, an absolute conception of reality is "incoherent"³⁰ because it is "a philosophical fabrication which distorts rather than describes our experience."³¹ However, against this view I agree with Gardner who maintains that this absolute standpoint is essential for Kant. What characterizes our epistemic situation for Kant is, according to this critic, the fact that we can make sense of our perspective on reality "only by referring to a point of view outside it, of which we can form a conception, but which we cannot occupy."³² Yet if we adopt the anodyne interpretation of Bird or Allison and give up the idea of a God's-eye perspective as incoherent or unhelpful, it seems difficult to distinguish between appearances and their ground or the things in themselves. Contrary to Allison and Bird I concur with Gardner that this reference point is crucial. I think a proviso of Dummett's quoted earlier should be heeded once more at this point: "One cannot argue to how things are from how they would be in circumstances one believes not to obtain."³³ To be sure, Kant does not prove that God and, therefore, a divine perspective exist, but it seems to me that this perspective is clearly the backdrop of the whole *Critique*. In my view an intuitive intellect or an intellectual intuition as the contrast for our actual epistemic situation is a constant theme running through the whole of the First *Critique*.³⁴ It has often been observed that Hegel's logic has been inspired by or can be read as a philosophical explication of the opening lines of St John's gospel. Similarly, it seems to me that Kant's epistemology can be read as a philosophical explication of verse 12 of chapter 13 of Paul's first letter to the Corinthians: "For now we see through a glass, darkly; but then face to face: now I know in part; but then shall I know even as also I am known."³⁵

In general, it seems to me that the TAV is too anodyne, as Langton suggests. It is too anodyne because, unlike the TWV which does not take the empirical realism seriously enough and misconstrues the way in which and the extent to which Kant is a realist, the

30 Bird 2006, p. 767.

31 *ibid.* This view is shared by Allison who denies that the theocentric model of cognition "should be taken as the norm in terms of which human cognition is measured" (p. xvi).

32 Gardner, p. 303. I found chapter 8 (*The meaning of transcendental idealism*) of Gardner's guidebook to the First *Critique* an excellent introduction to the problem and the most lucid exposition of it.

33 *The Metaphysics of Time*, p. 96. In: *Truth and the Past*.

34 To name but three of many other passages where Kant refers to it at length: B 72, B 145 and B 701.

35 See, for example: "But this something, thus conceived, is only the transcendental object; and by that is meant a something = X, of which we know, and *with the present constitution of our understanding* can know, nothing whatsoever..." (A 251, emphasis added).

Two-Aspects-View fails to do justice to the idealist aspects of Kant's epistemology. For, although he calls his position a "so-called" idealism, there are aspects of his epistemology which qualify for this label, especially his rejection of transcendental realism which, as I observed before, he sees essentially wedded to empirical idealism.

We have seen that the TAV falls at several hurdles. This leaves us with the following problem: if the Two-Worlds-view is clearly untenable and the Two Aspects-view is too anodyne: what could replace them? Considering this question will be my last task in this dissertation.

4.3. An alternative account of Kant's idealism

I think that when Allison claims that we find in Kant an "anti-metaphysical stance regarding the supersensible in all its guises",³⁶ he is simply mistaken. Being anti-metaphysical must not be equated with "anti-supersensible". At the end of the second introduction to the *Critique of Judgement* Kant says that the understanding provides proof of the fact that we know nature only as phenomenon by the fact that it provides us with a priori laws for nature, for by doing so it points to the fact that nature has a supersensible substrate, which, however, the understanding leaves undetermined. He then states the following: "Judgement by the a priori principle of its estimation of nature according to its possible particular laws provides this supersensible substrate (within as well as without us) with determinability through the intellectual faculty."³⁷ It seems to me impossible to give this clear reference to a supersensible substrate of nature a merely methodological, deflationary reading. I will quote a further passage that makes a similarly clear reference to the notion of a supersensible substrate or ground of appearances. I referred twice to the question in the Appendix where Kant asks whether there is something distinct from the world that contains the ground of the order of the world and his answer that there undoubtedly is. This passage continues as follows: "For the world is a sum of appearances; and there must therefore be some transcendental ground of the appearances, that is, a ground which is thinkable only by the pure understanding." (B 724) While advocates of the TWV would have to be frustrated by this careful reference to a mere "substrate" or "ground" of the empirical world, because it falls short of a "fully-fledged" affirmation of things in themselves and another world, this must already be too affirmative of something supersensible for the liking of adherents of the TAV such as

36 Allison 2004, p.72.

37 CoJ, B LVII.

Allison. The TWV and the TAV must each discount or play down passages which contradict the reading they advocate and they have to deny the merit of the opposing view. This is difficult to do because there is a great deal of strong and seemingly unequivocal textual support for both views. By contrast, similar to my suggested solution to the problem discussed in chapter three, the interpretation of Kant's idealism that is implied by the NPT can allocate genuine insight to both of these rival interpretations and yet claim that they get hold of only part of the truth: the TWV accommodates the truth that reality cannot be cut down to the empirically real. It realizes that, in the words of Höffe, "neither is ever everything known nor is everything knowable all there is",³⁸ so that we cannot dogmatically equate empirical reality with the *omnitudo realitas*. Yet this "more" is not another world. This is where the TAV has its merit. It sees correctly that another world and its, for us, hidden objects cannot be accommodated in Kant's epistemology. Yet, as we saw in the previous section, the TAV in its turn likewise fails to accommodate crucial passages of the Kantian corpus: it cannot really make sense of the real difference that Kant asserts between the world and its supersensible substrate.

In chapter three on the principle of systematicity I argued that the correct way to interpret this principle is more humble than the ontological, yet more assertive than the merely heuristic reading. I argued that we should see systematicity neither as substantive, i.e. as presupposing a universal feature of the empirical world, nor as restricted to a merely heuristic perspective. In the context of the relationship between the appearances and their ground an analogous solution can be formulated: we can assert that the special laws of nature are evidence that in experience we are in direct touch with an extra-mental reality, with what Kant calls the substrate of nature. This "One-World-and-its-Substrate" (OWSV) view differs from the TWV in that it upholds the difference between the world and its substrate, yet denies that this substrate must be thought of as another world. Contrary to the TAV the OWSV preserves Kant's clear distinction between appearances and things in themselves and resists attempts to offer an anodyne, merely methodological explanation of this distinction. In my view the difference between the ground or substrate of nature and its appearances must not be understood along the lines of true being as opposed to "mere appearances", i.e. as the difference between *Sein* and *Schein*. We can think of this relationship in such a way that the essential features of the appearances are manifestations of their ground,³⁹ where appearances are understood in

38 Höffe 1983, p. 201.

39 This view is also adopted by Baumanns: "When we refer to empirical objects or circumstances as causes, we mean the manifestation process of something substantial-physical = X, as it offers itself to the representation

the same way in which the adverb “apparently” can mean “manifestly” (in German: “offenbar”) as opposed to “seemingly”.

But how are we to understand talk of such a substrate of nature, if no mere methodological reading of this substrate is possible? It is not in space and time, yet it determines everything that is experienced in space and time. How are we to conceive it? I think that developments in science since Kant wrote his Critiques have opened up new ways of understanding Kant’s notion of a substrate which grounds the systematic theoretical unity of nature. I think this is true in particular of the development of quantum mechanics. In classical physics the world was considered as an association of observable object, i.e. of particles, fields etc. behaving according to definite laws. It was possible to form a mental image of these objects and their behaviour. With the arrival of quantum mechanics this ceased to be the case. Thus Dirac says in the preface to the first edition of his classic *The Principles of Quantum Mechanics*:

It has become increasingly evident in recent times, however, that nature works on a different plan. Her fundamental laws do not govern the world as it appears in our mental picture in any very direct way, but instead they control a substratum of which we cannot form a mental image without introducing irrelevancies.⁴⁰

This reads almost like an allusion to a proviso Kant makes in the *Groundwork of the Metaphysics of Morals* where he says that we are ordinarily inclined to assume behind the objects of our senses “something else invisible and acting of itself”⁴¹ yet that we spoil this insight by immediately sensualizing this, i.e. we try to make it an object of intuition and thus do “not become in any degree wiser.”⁴² That our access to reality, though mediated by the senses, is ultimately conceptual has become especially clear through the development of quantum mechanics: “[The] representations, with which we try to understand the order of reality, are our representations. ... Yet the world as objectively given mirrors itself not in them, but in their order, which we capture with these representations and formulate as laws. ... Objectivity is not anchored in matter, but in the law.”⁴³

One of the problems a comprehensive interpretation of Kant’s central doctrine of Transcendental Idealism must try to clarify is the conceptual thicket surrounding the relationship between the appearing “substrate of nature” and the merely problematic things in themselves or noumena. Summarizing what was said about this at the end of

informed by categories and special laws.” (Wenn wir empirische Dinge oder Verhältnisse als Ursachen bezeichnen, dann meinen wir den Manifestationsprozess eines Substantiell-Physischen = X, wie er sich dem kategorialbegrifflich und besondergesetzlich informierten Vorstellen darbietet.) (Baumanns 1997, p. 380).

40 Dirac 1958; from the preface to the first edition.

41 Groundwork, A 452.

42 *ibid.*

43 Bopp, p. 47.

chapter two, I would say the following. The fact that we are not satisfied by the mere thought of a substrate of sensibility and assume in addition to the phenomena objects only accessible in thought, i.e. noumena, has the following reason. The idea of a representation implies that there is something that is represented which in itself is not appearance but an object entirely independent of our sensibility. It is the totally abstract thought of an unknown something. The thought of a noumenon, i.e. of a thing which is not considered as an object of sensibility but as a thing in itself, is not self-contradictory. We cannot claim about our sensibility that it is the only possible way in which objects can be given, and this means that the concept of a noumenon is necessary for the purpose of preventing the supposition that our sensible intuition reveals how things are in themselves. Thus the concept of a noumenon is merely a limiting concept (*Grenzbegriff*) needed to curb the pretensions of sensibility. By contrast, the thought of something that corresponds to our sensibility, the substrate of nature which “materializes” our sensibility, as it were, is indispensable and without it Kant’s Transcendental Idealism cannot be formulated. We should be content with the idea of this totally unknown ground of the appearances. The idea of a noumenon only arises if we are *not* content with this idea of a totally unknown ground of appearances.

Accepting these provisos and not trying to inquire into something “too deeply concealed” for our powers of comprehension, what can we positively state by way of a conclusion to the debate in this chapter? I think it is the following: we get furthest in the interpretation of Kant’s idealism if we regard the appearances as the manifestations of what Kant refers to as “the substrate of nature”. This allows us to say that the empirical world, while not transcendently real, stands in for the transcendently real world and “does its work”, so to speak. Adickes, recommending the interpretation of Riehl (who in turn acknowledged Schopenhauer’s influence) already – and I think correctly – saw that in the special necessities of the empirical world we are in direct touch with the substrate of nature.⁴⁴ Thus, while our experience is limited to appearances these can be regarded on the empirical level “*as if*” they were things in themselves. I therefore reach the same conclusion as Gardner who says that the appearances, i.e. the objects of our immediate experience, are “objects which for us, as it were, stand in, for the transcendently real objects which would be given to a cognitively unlimited subject – the closest we get to the things that reason identifies as its ultimate cognitive target.”⁴⁵

44 Adickes 1924, p. 11.

45 Gardner, p. 290.

Clearly, this rough sketch of a response to the question as to the implication the NPT has for our understanding of Kant's idealism would need to be more fully articulated and defended – but that is another day's work. Nevertheless, I hope that enough has been said to render my final claim convincing: It would not be adequate to take on the debate on the correct interpretation of Kant's Transcendental Idealism without taking serious account of the NPT and what it claims, namely, that the formal conditions for the possibility of empirical knowledge depend on their material counterpart essentially.

5. In defence of elusiveness

With the above comments we have, in effect, closed the brief of this dissertation. However, as has no doubt become apparent, my commitment to realism and especially to the view that the world, or parts of it, might elude even our best theoretical efforts, has been more than purely scholarly. I would therefore like to conclude with just a few final reflections in favour of this view. My interpretation of the principle of the systematicity of nature as more than formal also implied a more than methodological view of Kant's references to the ground or substrate of nature. Yet my interpretation of the principle of the systematicity of nature also allowed that aspects of nature might be recalcitrant to our efforts to find theories for them and this reading commits me to speak up for elusiveness generally.

This entire dissertation has emphasized that we find in Kant a strong realism and I argued that the clearest indication of this is the fact that, for Kant, individual objects and processes may be elusive and prove recalcitrant to our best efforts to grasp them conceptually. That he does not assume the total intelligibility of the empirical world is, in my view, the strongest evidence of how robust Kant's realism in fact is. In this respect, McDowell seems even more of an idealist than Kant, for he reads Kant in *Mind and World* as claiming that "the conceptual realm has no outside" (p. 105). He also thinks that "no interesting sense" (ibid.) can be made of the idea that there is something outside the conceptual realm. However, I agree on this point with Williamson who wonders, although we do not know whether elusive objects actually exist: "[W]hat would motivate the claim that there are none, if not some form of idealism"?⁴⁶ We have seen in chapter three, in particular, that Kant allows for the possibility of genuinely elusive aspects of empirical reality and that he would thus never have claimed that all of reality is in

⁴⁶ Williamson, p. 17

principle accessible to thought and that therefore, contrary to McDowell's interpretation of his theory of knowledge, for Kant, there could indeed be something outside the conceptual realm.

Towards the end his *The Problems of Philosophy*, Bertrand Russell criticizes those philosophers who maintained that the intelligibility of the world could be proven. However, I think one can show that, despite his polemicism, he makes the same assumption himself. Thus in his proof that the law of non-contradiction is not only a law of thought but that it has ontological import, he writes the following:

... the law of contradiction is not a thought, but a fact concerning the things in the world. If this, which we believe, when we believe the law of contradiction, were not true of the things in the world, the fact that we were compelled to think it true, would not save the law of contradiction from being false. And this shows that the law is not a law of thought.⁴⁷

In my view this proof does not establish what it means to establish. All it proves is that we need to *assume* that the law of non-contradiction is not only a law of thought but one of things also. Russell is surely right when he insists that the fact that we have to assume something does not guarantee that it could nevertheless be false. After all: why should be true which we cannot doubt? Yet it seems to me that it is a mistake to think that something positive, i.e. that the law of non-contradiction is a metaphysical and not merely an epistemological law, follows from this insight. In order to yield an ontological conclusion, an additional metaphysical premise is required, i.e. that the laws of thought are isomorphic to the ultimate structure of reality. Yet this is equivalent to the assumption that we can establish certain knowledge about the ultimate structure of reality by mere a priori reasoning. Thus Russell appears guilty of a *petitio principii*: he has presupposed as true what he sets out to prove.

An extreme example of a philosopher who thought that the essential intelligibility of the whole of reality could be proven was, of course, Hegel who famously claimed that his logic provides knowledge of the mind of God "as it is in its eternal essence before the creation of nature or a finite intellect".⁴⁸ Yet even one who modifies his or her knowledge claims to a more humble scope must at least *postulate* that the world is, at least in part, intelligible. Without this postulate both philosophy and scientific research are not meaningful activities.

47 *The Problems of Philosophy*, S. 50

48 Hegel, *Einleitung zu Wissenschaft der Logik, Die Lehre vom Sein*, S. 33

In my view, Kant's Copernican Revolution does not cut reality down to the powers of comprehension of finite intellects. All I think it says is this: only if, and to the extent that, the empirical world conforms to our forms of intuition and understanding can we come to know it. It does not deny that there could be more to reality than *we* can grasp. Thus I think that Kant's famous assertion "that the conditions of the *possibility of experience* in general are likewise conditions of the *possibility of the objects of experience*" (B 197) is badly misunderstood, if it is understood to imply that there could be no things that we fail to understand. For all we know, the world may be full of them! Kant says clearly that he does not want to make the existence of objects dependent on the mind. In the phrase "the objects of experience" we must not isolate the term "objects" and take it to refer to empirical objects independently of the fact, that, as it happens, they are actually experienced. If we do, we hand the understanding a veto on what can be real.

If the – if only partial – intelligibility of the world is only a postulate, not something we know for certain in advance of actual efforts to gain insights, this makes for greater joy where insight is achieved, be this in the sciences or philosophy. Wherever we succeed to unite our knowledge under higher theories or to deepen our understanding of a philosophical problem this is, to quote Kant one last time, "a cause for considerable joy."⁴⁹ This joy is even greater if it is acknowledged that not even the possibility of gaining insight is in general guaranteed. I would like to finish, therefore, by commending the following observation of Wittgenstein:

What a strange statement of the scientists: 'We do not know that yet; but it is knowable
and it is only a question of when, not whether we will know it!'
As if this was obvious."⁵⁰

⁴⁹ CoJ, B XL

⁵⁰ Wittgenstein, *Vermischte Bemerkungen*, p. 85. "Welche seltsame Stellungnahme der Wissenschaftler -:»Das Wissen wir noch nicht; aber es läßt sich wissen, & und es ist nur eine Frage der Zeit, so wird man es wissen«! Als ob es sich von selbst verstünde."

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