Kant and the Epistemology of Metaphysics

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Abstract

I argue in this thesis that the topic of Immanuel Kant's *Critique of Pure Reason* is an *epistemology of metaphysics*. This has important consequences for how the argumentative structure of the work should be understood.

While the *Critique* constitutes an indispensable part of Kant's philosophy in general and his ethics in particular, it is doubtful whether it is fully successful as it stands. In a footnote to his *Metaphysical Foundations of Natural Science* Kant hints at an alternative argumentative strategy to establish the claims of the *Critique*, but he seems not to have developed this in the subsequent 2nd edition of the *Critique*. In this thesis I present a critical reconstruction of this alternative argumentative strategy applied to the central topics of the Transcendental Analytic. I claim that it is the aim of the Transcendental Analytic *as a whole* to provide a justification for the claim that pure concepts – Categories – are validly applied to objects of experience. Following Kant's hint in the footnote to the *Foundations*, I argue that this can be established directly from an analysis of the forms of empirical judgements, and that claims about space and time as forms of intuition and considerations about the nature of human sensibility, are redundant.

This reconstruction offers a profoundly Kantian, yet robustly realist way of resolving important philosophical problems.

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Chapter 1 – Introduction

This thesis is concerned with Immanuel Kant's philosophy as expressed in his *Critique of Pure Reason.*[1] I am sympathetic to the broad lines of Kant's arguments, and the kinds of aims and motivations that seem to have guided the writing of his *"Critical"* philosophy, though I have found myself in disagreement with a large number of the details of his arguments. I shall argue that Kant is correct in pointing out many epistemic phenomena that stand in need of an explanation, but that the actual explanations he offers are frequently mistaken. Even if Kant sometimes argues from false premises, his conclusions might nevertheless be true, and highly relevant to philosophical problems that are interesting not only in an historical sense.

My aim in the present thesis is present a critical reconstruction of a central line of argument in the *Critique*. The view that I shall be presenting is not one that is completely and explicitly stated by Kant. Nevertheless – although I am in no position to prove this – I believe that it is a view that must at least occasionally have been present in Kant's mind; this is a line of thought that he must have been *on to* even if he never stated it completely. Further, I believe that this view allows the *Critique* to fulfil its intended role in Kant's overall philosophy.

I shall try to show how this view can be gleaned from Kant's text in a number of important passages, and that it affords a way to resolve a number of problems.

1.1 The purpose of the *Critique of Pure Reason*

There seems to be to two clear strands to Kant's motivation for writing the *Critique.* One is the work's place in Kant's philosophy at large, which he clearly regarded as an integrated whole; the other is Kant's more specific disenchantment with the state of the then current metaphysics.

[1] Hereafter referred to as 'the *Critique*'

a) The role of the first **Critique** *in Kant's critical philosophy*

From the outset, Kant saw the first *Critique of Pure Reason,* and the subsequent *Critique of Practical Reason* on morals and moral reasoning as parts of an integrated whole. This is evident in a letter to his pupil, Marcus Herz, of 1772. Here he explains how he has been thinking about a project with the aim of understanding the extent and limits of "the whole of philosophy and the rest of knowledge":

> [I] was then making plans for a work that might perhaps have the title, *The Limits of Sensibility and Reason.* I planned to have it consist of two parts, a theoretical and a practical. The first part would have two sections, (1) general phenomenology and (2) metaphysics, but this only with regard to its nature and method. The second part likewise would have two sections, (1) the universal principles of feeling, taste and sensuous desire and (2) the first principles of morality.[2]

These two parts correspond closely to what ended up as the two first Critiques, of pure reason and of practical reason respectively.

One of Kant's interests was to resolve the "Antinomy of Freedom", the apparent conflict between our beliefs in causal necessities on the one hand and in the freedom of the human will on the other. The first *Critique* is necessary in order to evaluate the first lemma: our belief in the causal determinacy of the world. The aim of the first *Critique* is to establish the basis for and the proper limits of our knowledge of causal necessity, in order to show that there is no real incompatibility between this and the possibility of a free will. Then, in the second *Critique,* Kant will argue for the second lemma and claim that the actuality of the free will is a necessary presupposition of the very idea of morality. Thus practical reason – our actual use of moral concepts, our engaging in moral practices – does not *prove* theoretically, but rather *shows* or *demonstrates* the actuality of free will, or at least our inevitable assumption of and thus justified belief therein. In the preface to the *Critique of Practical Reason* Kant sketches the status of the assertion of freedom with respect to the two different aspects of reason. He here refers to "speculative reason" and occasionally to "theoretical reason" as being opposed to practical reason.[3]

> With the pure practical faculty of reason, the reality of transcendental freedom is also confirmed. Indeed, it is substantiated in the absolute sense needed by speculative reason in

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2 10:129-130. Unless otherwise indicated, emphases in quotations are always from the original.

3 Presumably 'speculative' and 'theoretical' reason are just synonyms for 'pure' reason, which is the object of the first *Critique* and hence here contrasted with practical reason.

> its use of the concept of causality, for this freedom is required if reason is to rescue itself from the antinomy in which it is inevitably entangled when attempting to think the unconditioned in a causal series. For speculative reason, the concept of freedom was problematic but not impossible; that is to say, speculative reason could think of freedom without contradiction, but it could not assure any objective reality to it. Reason showed freedom to be conceivable only in order that its supposed impossibility might not endanger reason's very being and plunge it into an abyss of skepticism.[4]

In the preface to the 2nd edition of the first *Critique,* Kant gives an instructive sketch of his position regarding the relation between the ideas of natural laws ("mechanisms of nature"), freedom and morality, and stresses the importance of showing that the idea of freedom is not *contradicted* by speculative reason, even though speculative reason could never prove its existence:

> Now suppose that morality necessarily presupposed freedom (in the strictest sense) as a property of our will … yet that speculative reason had proved that freedom cannot be thought at all, then that presupposition, namely the moral one, would necessarily have to yield to the other one, whose opposite contains an obvious contradiction; consequently **freedom** and with it morality … would have to give way to the **mechanism of nature.**[5]

That is to say: if the idea of freedom contradicts – is inconsistent with – the verdicts of speculative reason, then the belief in freedom and with it the belief in the validity of morals would have to be given up, since in Kant's view there is no logical necessity to the validity of morals. However, since we already presuppose the validity of morals in our everyday practices, all that is required is that the idea of freedom is not *inconsistent* with speculative reason and our knowledge of natural laws

> …for morality I need nothing more than that freedom should not contradict itself, that it should at least be thinkable that it should place no hindrance in the way of the **mechanism of nature.**[6]

This suggests that the results of the first *Critique* are essential for the tenability of the second *Critique.* Kant's moral philosophy is logically dependent on premises that are supposed to be established in his epistemology of metaphysics; namely the claim that

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4 Pract. p. 3

5 Bxxviii-xxix

6 Ibid.

freedom is consistent with the causal principle necessarily employed in experience. Without this premise, Kant's moral philosophy is unsupported. Therefore, if, as I believe, the first *Critique* does not succeed as it stands, it is a worthwhile task to see whether it is possible to reconstruct an argument for the same purposes, to the same effects and along the same *general* lines as that of Kant's *Critique of Pure Reason.* Even though Kant may have drawn invalid or unsupported inferences, or occasionally have argued from false premises, that does not entail that his conclusions were false. Especially not if, as I shall claim, he is arguing by way of inference to best explanation. In such cases, the conclusions are often in a sense *given* and the arguments are intended to shore up or secure principles that are already being employed; to remove any doubts as to the correctness of assumptions we cannot but make.

b) The disenchantment with metaphysics

Kant was educated in the Wolff-Leibnizian rationalist metaphysics, but came in due course to regard it as lacking both foundations and a proper method. Kant regarded metaphysics as the topic *par excellence* for philosophy, while at the same time seeing a crisis in the way metaphysical studies had so far been undertaken. He reports famously that he was awakened from his dogmatic slumber by reading David Hume's *An Enquiry concerning Human Understanding.*[7]

Hume ends his work by recommending that all of metaphysics be rejected as meaningless:

> When we run over libraries, persuaded by these principles, what havoc must we make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: For it can contain nothing but sophistry and illusion.[8]

Since metaphysics cannot, in Kant's terms, be either analytic ("abstract reasoning concerning quantity or number") or empirical ("experimental reasoning…"), this means that if Hume's claims were to be accepted, then all of metaphysics would have to be committed to the flames. Now Kant could not accept this conclusion, in large part because he thought that by the same argument, all of mathematics, geometry, the

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7 Proleg. 4:260. However, Guyer and Wood cast doubt on the historical accuracy of this claim in their introduction to the Cambridge translation of the *Critique* (p. 23-35)

8 Hume, *EHU* 12.34

foundations of natural science and even the possibility of any systematic empirical knowledge would have to be denied too. He did however accept Hume's premises, insofar as granting that if metaphysical knowledge is supposed to be grounded in or justified by the same principles as either analytic judgements of judgements of experience, then metaphysics would indeed be impossible. So, we stand in need of an explanation of how metaphysical knowledge, how "metaphysics as a science", could be possible. Without a correct epistemology of metaphysics, it has proved impossible to develop a good methodology of metaphysics.

> **Metaphysics** […] has up to now not been so favored by fate as to have been able to enter upon the secure course of a science, even though it is older than all other sciences, and would remain even if all the others were swallowed up by an all-consuming barbarism. For in it reason continuously gets stuck […] and it is so far from reaching unanimity in the assertions of its adherents that it is rather a battlefield, and indeed one that appears to be especially determined for testing one's powers in mock combat; on this battlefield no combatant has ever gained the least bit of ground, nor has any been able to base any lasting possession on his victory. Hence there is no doubt that up to now the procedure has been a mere groping, and what is the worst, a groping among mere concepts.[9]

In the context of Kant's critical philosophy there are then three interrelated demands that must be met by a critique of pure reason: (1) It must provide a correct epistemology of metaphysics. That is to say that it must *demonstrate* that we are in possession of metaphysical cognitions which are employed in experience, *analyse* how these differ from ordinary empirical cognitions and *explain* how we come to possess and validly to employ such metaphysical concepts and principles. (2) It must use this to provide or at least point the way to a viable methodology for metaphysics as a science, and (3) it must show by way of these that speculative reason at least *does* not, and preferably that it *could* not disprove the possibility of freedom. I aim in this thesis to present a way of meeting the first two of these demands, and to pave the way for eventually meeting the third demand.

1.2 Reading the Critique of Pure Reason

Kant's *Critique* is by any account an excessively complex work. Partly this is because Kant attempted in many ways to steer a middle course between the *rationalism* represented by the Wolff-Leibnizian metaphysical tradition and the *empiricism*

[9] Bxiv–xv

represented in particular by Berkeley, Locke and Hume, thus having to argue as it were on two fronts; partly because Kant's views seem to have been developing through the period in which the two versions of the *Critique* were written. This complexity has been noted by many commentators:

– Guyer and Wood in their Introduction to the Cambridge edition of the *Critique*:

> This complex program led to the enormous complexity of the structure and argument of the *Critique of Pure Reason.* To many readers, the elaborate structure or "architectonic" of the *Critique* has been a barrier to understanding it.[10]

– Strawson in *The Bounds of Sense*:

> I […] have read and re-read the work with a commingled sense of great insights and great mystification.[11]

– Paton in *Kant's Metaphysics of Experience*:

> The crossing of the Great Arabian Desert can scarcely be a more exhausting task than is the attempt to master the windings and twistings of the Transcendental Deduction.[12]

As it is not obvious from the *Critique* itself how it should be understood, it would seem reasonable to look at any hints and clues Kant himself gives us as to how to understand the broad structure of the work. In the following three sections, we shall to this end investigate certain key passages where Kant comments on his own project.

1.3 The Epistemology of Metaphysics

Kant published two editions of the *Critique,* one in 1781 and a revised edition in 1787. Both in the introductions to these editions and in various writings from the same period, we find several clues of how to understand Kant's argumentative strategy.

In the *Prolegomena to any Future Metaphysics That Will be Able to Come Forward as Science,* published in 1783, Kant presents his Critique of metaphysics in the form of four progressive parts of "the Main Transcendental Question". The end point is what he

10 Kant 1998, p. 3

11 Strawson 1973, p. 11

12 Paton 1936, p. 547

terms "The General Question of the Prolegomena", namely "How is Metaphysics Possible as Science?",[13] and to provide an answer to this question, Kant finds it necessary first to answer three progressive questions:

> How is pure mathematics possible?
> How is pure natural science possible?
> How is metaphysics in general possible?

A similar line of thought runs through the introduction to the second edition of the *Critique.* This too ends in the same question as the Prolegomena: "How is metaphysics possible as science?"[14]

Indeed, this kind of question: How is this or that possible? underlie large parts of Kant's thoughts, and I think this is important in understanding what sort of argumentative structure one should expect to find in the *Critique.* I take it that to ask how something is possible is to ask for an *explanation* of the phenomenon, and when that explanation is sufficiently systematic and integrated with other explanations it forms part of a *theory.* A natural way to present this kind of argument is first to *present* or *point out* observable actual phenomena, show that these phenomena are puzzling, interesting or for some reason stand in need of explanation, and then to argue for the best explanation of them. Once we have good grounds for accepting a certain explanation – a theory – we may then be able to draw logical conclusions from the theoretical assumptions. The introduction to the second edition of the *Critique* shows this structure exceptionally clearly. Kant here presents a short series of factual premises and explanatory tasks:

> [Premise:] We are in possession of certain *a priori* cognitions, and even the common understanding is never without them.[15]
>
> [Task:] Philosophy needs a science that determines the possibility, the principles, and the domain of all cognitions *a priori.*[16]

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13 Proleg. p. 365

14 B22

15 B3

16 B6

> [Premise:] Synthetic *a priori* judgments are contained as principles in all theoretical sciences of reason.
> 1. Mathematical judgements are all synthetic […]
> 2. Natural science *(Physica)* contains within itself synthetic *a priori* judgments as principles […]
> 3. In metaphysics […] synthetic *a priori* cognitions are supposed to be contained.[17]
>
> [Task:] How are synthetic judgments *a priori* possible? […]
> How is pure mathematics possible? […]
> How is pure natural science possible? […]
> How is metaphysics as a natural predisposition possible? […]
> How is metaphysics possible as science?[18]

Unfortunately, it is easy to lose sight of this structure in the complex arguments of the *Critique* proper. One of my aims in this thesis is to show that reading the *Critique* as conforming to this argumentative structure makes a lot of sense with regards to many passages that otherwise become very difficult to understand.

Kant thus presents his critical project as the posing and answering of "transcendental" questions, of which the main one is "How is metaphysics possible as science?".

In the letter to Herz, Kant talks of how he is planning the *Critique*, and here he gives a more precise formulation of the question of how metaphysics is possible:

> As I thought through the theoretical part [of the coming *Critique of Pure Reason*]… I noticed that I still lacked something essential, something that in my long metaphysical studies I, as well as others, had failed to consider and which in fact constitutes the key to the whole secret of metaphysics, hitherto still hidden from itself. I asked myself this question: What is the ground of the relation of that in us which we call "representation" to the object?[19]

Since the fundamental question of how metaphysical representations are related to their objects – i.e. how metaphysical concepts refer and how metaphysical judgements are justified – has not been answered, no fruitful metaphysical method has been developed. I shall refer to this problem as *the Key to Metaphysics*. Kant, then sees the Key to

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17 B14–B18

18 B19–B22

19 10:130

Metaphysics as an explanation of the relation of *intentionality* or "aboutness". How is it that we are able to *think* about the world, *judge* about states of affairs, *perceive* objects? What is the relation between our representations – thoughts, concepts, judgements, perceptions – and the world? This is the subject matter of *epistemology* – the theory of knowledge. Metaphysics as a science, would, if true, represent a body of knowledge, so to ask epistemic questions with regards to metaphysics in particular is to ask for an *epistemology of metaphysics.*

This question of how our representations relate to objects is indeed present throughout the *Critique.* We should note however, that Kant only sees this relation as problematic and deserving of explanation within the domain of *metaphysical* knowledge. With regards to *empirical* cognitions, Kant believes that we have an easy, natural explanation by way of a causal theory of perception:

> If a representation comprises only the manner in which the subject is affected by the object, then it is easy to see how it is in conformity with this object, namely, as an effect accords with its cause, and it is easy to see how this modification of our mind can *represent* something, that is, have an object. Thus the passive or sensuous representations have an understandable relationship to objects…[20]

This means that, at least at this stage, Kant takes empirical knowledge for granted, and indeed we shall see that the nature of our ordinary empirical knowledge are frequently used as premises for Kant's arguments. This acceptance of empirical cognition as unproblematic is re-iterated in the introduction to the Transcendental Deduction in the *Critique:*

> We make use of a multitude of empirical concepts without objection from anyone, and take ourselves to be justified in granting them a sense and a supposed signification even without any deduction, because we always have experience ready at hand to prove their objective reality.[21]

In the introduction to the 2nd edition of the *Critique* Kant introduces the idea of a "special science under the name of a critique of pure reason". One of the exegetical theses that I shall defend is that a critique of pure reason *just is* an epistemology of metaphysics. Kant presents the idea of this special science termed a critique of pure reason as what would be needed to answer the series of questions he has posed earlier in

[20] Ibid.

[21] A84/B116

the introduction, which questions correspond to the parts of the "Main Transcendental Question" from the Prolegomena. This science is explained as being a subset of what should be called "Transcendental Philosophy".[22] Kant explains this term in the following way:

> I call all cognition transcendental that is occupied not so much with objects but rather with our mode of cognition of objects insofar as this is to be possible *a priori.*[23]

Now, this phrase is puzzling: What is it for a cognition to be occupied "not so much with objects, but rather with our mode of cognition of objects"? It would seem that normal, empirical cognitions are cognitions of objects *simpliciter*, so cognitions that are occupied with our mode of cognition of objects, must be cognitions whose object are again simple empirical cognitions, or more precisely the form or nature of such simple cognitions of objects, i.e. "our mode of cognitions of objects". So transcendental cognition is a second-order or *reflective* knowledge. It is knowledge *about* first-order, empirical knowledge. In a word: epistemology. When it is further specified as being concerned with cognition "insofar as this is to be possible *a priori"*, this must mean that transcendental philosophy just is the epistemology of *a priori* knowledge. Now, according to Kant, *a priori* knowledge, comprises more than just metaphysics and includes *all* knowledge that is independent of experience; i.e. logic, mathematics and metaphysics. Hence the epistemology of metaphysics is a particular part of the epistemology of *a priori* knowledge, so if "the critique of pure reason" just is the epistemology of metaphysics, it should be described as a proper part of transcendental philosophy. This is exactly what Kant goes on to do:

> I call all cognition transcendental that is occupied not so much with objects but rather with our mode of cognition of objects insofar as this is to be possible *a priori.* A **system** of such concepts would be called **transcendental philosophy**. But this is again too much for the beginning. For since such a science would have to contain completely both the analytic as well as the synthetic *a priori* cognition, it is, so far as our aim is concerned, too broad in scope, since we need to take the analysis only as far as is indispensably necessary in order to provide insight into the principles of *a priori* synthesis in their entire scope, which is our only concern.[24]

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22 A12/B25

23 A11/B25

24 A12/B26

> Transcendental philosophy is here the idea of a science, for which the critique of pure reason is to outline the entire plan architectonically … That this critique is not itself already called transcendental philosophy rests solely on the fact that in order to be a complete system it would also have to contain an exhaustive analysis of all human cognition *a priori*.[25]

The critique of pure reason as a "science" in general and Kant's book by that name in particular is thus an *epistemology of metaphysics.*

Michael Friedman comes to similar conclusions in his recent article "Kantian Themes in Contemporary Philosophy":

> Transcendental philosophy is thus a meta-discipline, as it were, whose distinctive task is to investigate the nature and conditions of possibility of first-level scientific knowledge.[26]

Friedman is clearly right about the transcendental philosophy being a meta-discipline, but he overlooks, it seems to me, that the object of transcendental philosophy is exclusively *a priori* knowledge, which according to Kant includes mathematics, broadly logical truths and metaphysics. Metaphysics in turn is supposed to constitute the pure part of natural science. So transcendental philosophy investigates rather the nature and conditions of *a priori* knowledge, which *in turn* are necessary conditions for empirical knowledge, and *eo ipso* for the empirical part of natural science.

It is important to note that this means that the *Critique* is *not* a work of metaphysics, in the same sense that a book about the methodology of physics is not a work *of* physics. Kant's works of metaphysics proper are his *Metaphysical Foundations of Natural Science ("Foundations")* and *The Metaphysics of Morals.* In the *Critique,* Kant is not propounding or arguing for specific metaphysical theses, but merely laying bare those metaphysical principles which are always already employed in empirical knowledge, and explaining how it is possible that we validly employ such principles. In short, he is giving an epistemology of metaphysics. He is explaining how metaphysics is possible – giving a theory of metaphysical knowledge, and then using this theory to devise a suitable methodology for metaphysics as a science, and this methodology is then employed in his two works of metaphysics proper. The *Critique of Pure Reason* provides the necessary foundations for being able to claim in his works in moral philosophy that there is no

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25 A13/B27

26 Friedman (1998) p. 112

incompatibility between the metaphysical principle of causality which grounds the scientific presupposition of causal determinacy, and the moral assumption of human freedom of will.

Note that in claiming that the Critique of Pure Reason is an epistemology of metaphysics, I am in direct contradiction with as influential a commentator as Heidegger, who states outright "The *Critique of Pure Reason* has nothing to do with a 'theory of knowledge'".[27] I shall however try to make the case that reading the *Critique* precisely as an epistemology of metaphysics makes excellent sense of the actual arguments and assertions of the work.

1.4 The overall argumentative structure of the *Critique*

Since metaphysics by definition is *non-empirical*, independent of empirical investigations, Kant uses the term 'pure' for metaphysical elements of our knowledge. He thus talks of *pure concepts* and *pure principles* – *pure* in the sense that they are non-empirical. Their content goes beyond what could be grounded by experience. We may, and Kant thinks we do, have good models for explaining how empirical concepts refer and how empirical judgements are justified, but these models cannot account for cognitions that go beyond experience, hence the need for an epistemology of metaphysics. Now, Kant's fundamental thesis is that an analysis of the *form* of empirical knowledge (abstracted away form any particular *content)* will yield the elements needed to explain the existence and applicability of pure concepts and principles. Kant also holds that there are *pure intuitions*, and that our knowledge of time and space is essentially based on such pure intuitions. I am largely going to bypass this discussion in the present thesis. Partly this is because I think that Kant's views on the knowledge of time and space are ultimately untenable, and partly because the considerations regarding time and space are unnecessary in order to explain our knowledge of causal facts.

a) The form of empirical knowledge

In the introduction to the chapter on Transcendental Logic, Kant explains how he thinks that pure concepts "contain" only the form of empirical knowledge.

[27] Heidegger 1990 p. 11 [16-17]

> Both [intuition and concepts] are either pure or empirical. **Empirical,** if sensation (which presupposes the actual presence of the object) is contained therein; but **pure** if no sensation is mixed into the representation. One can call the latter the matter of sensible cognition. Thus pure intuition contains merely the form under which something is intuited, and pure concept only the form of thinking of an object in general. Only pure intuitions or concepts alone are possible *a priori*, empirical ones only *a posteriori*.[28]

Giving a correct analysis of the *form* of empirical knowledge, and then drawing conclusions from there, is an important aspect of Kant's argumentation. I shall look at the particulars of how this is done in the following more detailed discussions of the various stages of the argument in the *Critique.*

A cornerstone of the *Critique* is the "Transcendental Deduction of the Pure Concepts of the Understanding". Here Kant is trying to answer the question of how pure concepts make experience – empirical knowledge – possible. This question is a close relative of what, in the letter to Herz was termed "the key to the whole secret of metaphysics", namely the relation between representation and object. If a representation is to count as a cognition of an object, there must be some kind of *correspondence* between the object and the representation. If the representation changes while the object stays the same or *vice versa*, that representation no longer correctly represents the object. So, the question then is what sort of relation could constitute such a correspondence between representation and object. In the introduction to the Transcendental Deduction, Kant claims that there are only two possible explanations for such a correspondence of representations and objects.

> There are only two possible cases in which synthetic representation and its objects can come together, necessarily relate to each other, and, as it were, meet each other: Either if the object alone makes the representation possible, or if the representation alone makes the object possible. If it is the first, then this relation is only empirical, and the representation is never possible *a priori*. And this is the case with appearance in respect of that which belongs to sensation. But if it is the second, then since representation in itself … does not produce its object as far as **existence** is concerned, the representation is still determinant of the object *a priori* if it is possible through it alone to **cognize something as an object.**[29]

I shall look closer at this claim that a correspondence could only be constituted by either the object making the representation possible or *vice versa* in section 3.1. Note that Kant

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28 A50-51/B74-75

29 A92/B124-25

does not claim that the pure concepts *create* their objects, "does not produce its object as far as **existence** is concerned". Rather the claim is that the representations makes possible the cognition of something *as* an object. So the pure concepts make possible the experience of objects *as* objects, they make possible the experience of objects in general.

If this could be established – that a correspondence between pure concepts and objects could only be explained by the concepts making the experience of the objects possible – then explaining *how* this happens is clearly the completion of the question of how pure concepts are related to objects, and hence the central importance of the Transcendental Deduction.

Unfortunately this central passage of the *Critique* is far from clear, and its correct interpretation remains a much debated topic of Kant-scholarship. To add to the difficulty, Kant wrote two completely different versions of the Deduction for the two editions of the *Critique*. In a footnote to the preface to *Metaphysical Foundations of Natural Science,* Kant's first Critical work of metaphysics proper, published in between the two editions of the first *Critique,* Kant responds to a criticism of the *Critique.* Here he concedes the obscurity of the first edition of the Deduction. But, he promises, he now sees that the problem of how experience is possible only by means of the pure concepts can be solved with "great facility"

> …inasmuch as it can be solved almost by a single conclusion from the precisely determined definition of a judgment in general.[30]

So, Kant's claim is that the explanation of how pure concepts make experience possible and thus are able to correspond to objects can be made by a conclusion from the definition of judgement in general. Now, Kant makes an important distinction between *analytic* and *synthetic* definitions, the latter is applicable to *made* concepts and the former to *given* concepts. This will be examined in greater detail in section 2.1 below, where I shall argue that the concept of "judgement in general" must be regarded as a *given* concept, and as such to be the appropriate object of an *analytic* definition. If this is correct, it would seem fair to read Kant's "precisely determined definition of a judgment in general" as referring to an *analysis* of the forms of our judgements. The structure of the argument, then, should be something like the following.

The premise is: We make judgements. By analysis of our actual practice of judging, we find that the judgements we make are all of certain forms. From the fact that we are

[30] Found. p. 476 n.

able to make judgements of these specific forms, we can draw conclusions regarding the role of pure concepts in making experience by way of judgements possible. I shall refer to this supposed analysis of the forms of the judgements we in fact make as *the Analytic Premise.*

In the same footnote, conceding the obscurity of the 1st edition Transcendental Deduction, Kant promises to remedy it:

> I shall take the earliest opportunity to make up this defect (which concerns only the manner of the presentation and not the ground of explanation, which is already given correctly there).[31]

"The earliest opportunity" must have been the 2nd edition of the *Critique,* so we might expect there to find arguments going from the specific forms of judgement – "the precisely determined definition of a judgment in general" – to conclusions about pure concepts and the possibility of experience of objects.

Unfortunately we find very little of the sort. Instead the 2nd edition argues mainly from the "necessary unity of consciousness" and from claims about the forms of and necessary conditions for the possibility of *intuitions,* to conclusions that all intuitions stand under the pure concepts, because the pure concepts are conditions for how "the manifold of intuition" can come together in one consciousness. This in turn is explained by reference to pure forms of sensibility.[32] Neither in the Transcendental Deduction itself, nor in the ensuing treatment of "synthetic principles of pure understanding" is there much trace of arguments going from a premise that we make judgements of certain forms, to conclusions about pure concepts making experience (of objects) possible.

b) "Making experience possible" – subjective and objective conditions

The idea *that pure concepts make experience possible* plays a fundamental role in Kant's discussion of the Key to Metaphysics. Throughout both versions of the Transcendental Deduction and all through the *Critique* runs the thought that the validity of pure elements of experience can be explained by the claim that they make ordinary empirical experience possible.

I take it that to "to make something possible" just is to meet necessary conditions for it. (Meeting *sufficient* conditions for something, would be to make it *actual).* So my

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31 Ibid.

32 'Pure intuition' which is defined as 'pure form of sensibility'; A20/B34–35

strategy in the following discussion will be to take as a substantive, observable premise that we make ordinary empirical judgements such as

(1) That apple is green

Making that judgement constitutes having the experience that the apple is green.

Now, one could try to find both necessary and sufficient conditions for having such experience, and thereby give a complete theoretical account of our empirical cognitive capacities, but my aim here will be more modest. In line with the idea that pure concepts make experience possible I am merely going to investigate such *necessary* conditions for experience as are required to give an explanation of the Key to Metaphysics.

So, take (1) as an example – can we identify some necessary conditions for having this kind of experience? Firstly it seems obvious that in order for me to have the veridical experience of an apple being green, there must in fact *be* a green apple present to me. So there are clearly necessary conditions on the world for our particular experience to be possible. These could naturally be termed *objective* conditions.

However, there are also necessary conditions on our cognitive capacities. For instance, to be able to recognise general properties, such as greenness, it seems plausible that we must possess general *concepts* of these properties. Such conditions would naturally be termed *subjective* conditions.

This thesis, as is the case with the *Critique,* is concerned with the necessary *subjective* conditions for having the kind of experience that we do have. It is a moot and interesting question whether and to what extent the objective and subjective conditions for experience are inter-dependent or inter-definable, but that is not a question that needs to be answered here. There can be little doubt that there *are* necessary subjective conditions for experience, and these will provide the premises for drawing the desired conclusions regarding pure concepts and principles.

1.5 The aims of this thesis

I disagree with Kant about whether forms of sensibility need to be invoked in order to explain our possession of pure concepts and principles, and this is the main point at which I depart from a purely "Kantian" philosophy. My aim in the following discussion will be to show that the possibility of metaphysics, our possession of metaphysical cognitions, can be explained without assumptions about sensibility, but rather solely by an analysis of the form of our ordinary, empirical judgements. I thus aim to give a

critical reconstruction of the kind of argument that Kant hints at in his footnote to the *Metaphysical Foundations of Natural Science* – namely the claim that the validity of the Categories could be shown to follow from "the precisely determined definition of a judgment in general".[33] This appears to be a radically different strategy to the one employed in the 1st edition of the Transcendental Deduction – and we should expect to find it employed in the subsequent 2nd edition version. But as mentioned (on p. 21), these expectations are not fulfilled.

Whatever Kant's reasons might have been for abandoning it, I take it that Kant must have had an argumentative strategy in mind when he wrote this footnote. In the following chapters I shall try to reconstruct in detail how such a strategy could be developed. In so doing, I shall show that Kant had all the necessary elements for developing such a strategy, and that much of the required argumentative structure can already be found in the *Critique.* This reconstruction will fill chapters 4 through 9.

Chapter 2 is devoted to presenting some key methodological principles I believe to be applied in the *Critique,* and which I will apply in my reconstruction.

Kant's arguments for the validity of metaphysical knowledge rests on a largely unstated *abstractionist* theory of empirical concepts. In chapter 3 I give details to such an abstractionist theory.

My aim is to *present* a new approach to finding the Key to Metaphysics, retaining those general features of Kant's philosophy that I think are correct whilst presenting alternatives for those parts that I find untenable. I shall try in each case to give reasons for why some more specific parts should be rejected whilst other more general features should be retained. I shall not however aspire to argue *conclusively* against every Kantian view that I want to reject. Rather, I shall try to argue positively *for* my way of finding the Key to Metaphysics. One of the theses I shall defend is that the structure of what Kant terms 'transcendental arguments' is *abductive* reasoning – inference to the best explanation. If this is true of Kant's arguments and they are appropriate to the task to which they are put, then it will not always be possible to give conclusive arguments against a particular view. Rather, the competing explanations must be set out as clearly as possible and then be given an overall comparison.

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[33] See p. 30

Chapter 2 – Methodology

Kant is a long-winded writer, and the arguments of the *Critique* are often intricate and complicated, so in order to understand Kant's position and his arguments properly, it is necessary to understand his methodology. Unfortunately the methodology is not always transparently evident from the *Critique* itself, especially not to a late 20th century reader.[34] We may, however, find quite a number of helpful clues from Kant's *Logic* and from the much-neglected final section of the *Critique*, the "Transcendental Doctrine of Method".

Kant uses a system of analysis and synthesis:[35] First, analyse and isolate the elements of the phenomenon under scrutiny (in this case: human knowledge), then draw conclusions from these analytic (arrived-at-by-analysis) elements. This means that we find both analytic and synthetic arguments in the *Critique.* The synthetic arguments are most often explicitly stated, but Kant quite often merely presents the *results* of his analyses. There are reasons for this, as we shall see in the next section, but it is one of the things that make the *Critique* hard to understand and assess.

I have found it useful and illuminating to read Kant as tacitly employing two closely related analytic methods, namely *conceptual analysis* and *explication*. Neither the nature of these methods nor the occasions of their use are clearly specified by Kant, but it is my contention that their assumption contribute greatly to making sense of his assertions.

2.1 Conceptual analysis

As I shall be basing the reconstruction of Kant's project on his clues about it being deducible from a "precise definition of judgment in general", we should look closely at what Kant says about *definition* in his *Logic*, where 10 paragraphs (§§99–109) are devoted to the topic of definitions.

Kant draws an important distinction between *analytic* and *synthetic* definitions. "The former are definitions of a *given,* the latter of a *made* concept."[36] Since concepts are the objects of definition, this distinction between two kinds of concepts is important. Kant states this distinction in the very first section of the *Logic:*

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34 The year of writing of this thesis, 2000, is, of course, the last year of the 20th century.

35 Indeed, the concept pair 'analytic'/'synthetic' crops up frequently all through the *Critiques.*

36 Log. §100

§4. Given (a priori or a posteriori) and Made Concepts

All concepts, as to their *matter*, are either *given (conceptus dati)* or *made (conceptus factitii)*. The former are given either a priori or a posteriori.[37]

Made concepts are typically *theoretical terms*, concepts which are introduced and explicitly defined in the course of formulating a theory, elaborating a science. In the introduction to the *Logic*, Kant describes this process. He gives mathematics and physics ('philosophy of nature') as examples of disciplines where concepts are *made* in this way:

> For when I make a distinct concept, I begin with the parts and proceed form these to the whole. There are no characteristics present here; I obtain them first by synthesis. From this synthetic procedure then results synthetic distinctness, which actually expands my concept as to content by what is added as a characteristic *over and above* the concept in intuition (pure or empirical). This synthetic procedure in making distinct concepts is employed by the mathematician and also by the philosopher of nature. For all distinctness of mathematical as well as of experiential cognition rests on expansion through synthesis of characteristics.[38]

Since these terms are explicitly introduced, the definition *legislates* their use, and we can know with certainty that this synthetic definition is precisely and exhaustively what is "contained" in the made concept. So, synthetic definitions can be both precise and certain. However, to give a synthetic definition, one would obviously need to use pre-existing concepts, so not all concepts can be *made*. Some concepts must be *given*. These are concepts that we find ourselves using without having recourse to or need for an explicit definition. Indeed most of our concepts are of this kind, the ordinary empirical concepts like 'apple', 'horse' or 'table' among them. But even if recourse to an explicit definition is no prerequisite for using the concept correctly, we are often able to get at least part of the way towards a definition also of given, empirical concepts. However, since the actual use of the concept precedes the definition, the definition has to be derived from an *analysis* of the given use of the concept. We have to base the analysis on the actual use of the concept, and try to extract the implicit conditions of its use on the available data.

Now, before we go on to examine how exactly this analytic definition is to be derived, we should try to determine whether Kant's "definition of judgement in general" should be synthetic or analytic, i.e. whether the concept of judgement is a *made* or a *given*

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37 Log. §4

38 Log. p. 70

concept. As Kant is interested in human knowledge such as it is, not just how it might be given some arbitrary theoretical definition, it would seem safe to assume that his "definition of judgment in general" must be an *analytic* definition. The phenomenon of making judgements is clearly an observable fact of human behaviour, and surely it is possible to recognise this practice and hence *use* the concept of judgement or judging without having recourse to an explicit exhaustive *definition* of the term.

Of course, there is nothing to stop Kant from *introducing* 'judgement' as a theoretical term, and *give* it whatever definition he wants. If he does this, however, there will always be a further question whether any conclusions he draws concerning the referent of this technical term also pertains to what we *normally* refer to as 'judgement'. If 'judgement' is introduced as a made concept, then we are still left with the task of showing how this term relates to the observable phenomenon picked out by the *given* concept 'judgement'. So, we would still need the analytic definition.

But what exactly is this process of analysis, by which we can derive the definition of 'judgement'? What sort of arguments could be employed to establish these analytic claims? Kant's account of how this is supposed to be carried out is very sketchy, but I think it is possible to flesh it out into an understandable method, and the following paragraphs contain my suggestion of how this should be done.

By an analytic definition we hope to make clearer the *content* – the meaning – of some concept. Now, there is no mechanical process whereby we can start with the given concept and at the end of which we are guaranteed to have the complete definition of it. We find ourselves able to apply concepts, with no recourse to nor need for explicit rules, verification methods, lists of elementary contents or what have you. There is no way simply to read off the content of a concept from the usage, either from a 1st person or a 3rd person perspective.

There are, however, ways of *ruling out* putative meaning claims – namely by *testing* them against uncontested judgements. Suppose we wonder whether the meaning of 'cat' might be 'furry creature'. If that were true there could and would be no furry creature that were not also cats, hence the judgement 'All furry creatures are cats' would be true. But, since any rational and competent user of English would agree that there are indeed furry creatures which are not cats, e.g. dogs, the meaning of 'cat' cannot be 'furry creature'. So one obvious way of conducting the process of conceptual analysis, is by testing of hypotheses. We have a large stock of uncontested judgements against which we can test meaning-hypotheses. If the judgement against which we want to test a meaning

hypothesis is itself contested, then of course it cannot be used as a datum for conceptual analysis.

Now, testing of hypotheses against the vast data set of uncontested judgements can get us quite far in uncovering the meaning of concepts, but it has one serious shortfall: When we find counter examples to a meaning hypothesis, e.g. 'All furry creatures are cats', we know that this hypothesis is false; but if we find no counter examples, and we are satisfied that no counter examples exist, we do not yet know whether this is because the *meaning* of 'cat' is 'furry creature' or whether purely as a matter of empirical fact there are no furry creatures that are not cats in the actual world, but that it is logically possible that there be such in another possible world. Kant notes this problem when stating the "Main Requirements of Definitions"

> …as to *modality,* the characteristics must be *necessary* and thus not be such as accede through experience.[39]

'Characteristic' is Kant's technical term for the constituents of meaning, and in saying that these must be necessary, Kant is just making the point that the acceptance of any characteristic as part of the meaning of a concept must be done on the basis of the lack of any *possible* counter example, rather than just an absence of *actual* counter examples.

Since we have an ability to apply concepts correctly, we clearly have at least an *implicit* knowledge of their meaning – a certain practical competence. We *do* it, and in the vast majority of cases we agree on how it should be done. Otherwise we could hardly communicate. So, the information is *there*, somehow, in us, and we can utilise this fact in our search for meanings, by testing our hypotheses against our linguistic intuitions. This, I will claim, can be done in two ways, directly and indirectly.

Testing a meaning hypothesis directly against our linguistic intuitions presupposes an ability to *recognise* an intensional analysis as correct. I find it highly plausible to assume that in favourable cases we have such an ability, and I shall try to illustrate this with an analogy: Consider our ability to recognise faces – *to know what someone looks like*. This knowledge can take two forms: It can be *reconstructive,* as when an artist is able to draw someone's face from memory, or it can be *recognitional* as when I am frequently able to recognise my friends in the streets. When it comes to faces most of us have some, but not much of the reconstructive abilities, in that we can conjure up a more or less precise

[39] Log. §107

mental image of the faces of those we know best, but we would be hard pressed to produce anything like an accurate sketch; whereas we have quite good recognitional abilities, in that we recognise a vast number of people on sight. In an analogous fashion I find it plausible to think that sometimes we are able to *recognise* a correct meaning analysis as such, even if we have no way of *generating* the analysis.

Indirectly testing against linguistic intuition involves the use of *thought experiments.* By conceiving of and describing various counter-factual situations and considering what we *would* say in such situations, we can search not only for *actual* counter examples but also for *possible* counter examples. Consider the possible world where there are four-legged, soft-pawed, nimble, hairless creatures with pointed ears, tails and whiskers that chase mice and go "meow". Would we call such creatures 'cats'? If we are satisfied that not only are there no *actual* counter examples to a meaning hypothesis, there are also no *possible* counter examples, then we have strong reasons for holding the meaning hypothesis to be correct.

On this model, the method of conceptual analysis has a lot in common with the hypothetico-deductive method of empirical science. Analytic meaning claims – analytic definitions – should be regarded as theories, that are supported by the data of uncontested judgements and the verdicts of our linguistic intuitions. The status of analytic definitions will therefore share many features with the status of empirical theories. If it is true that all theories are underdetermined by their data, then analytic definitions are also underdetermined, so they can never reach the level of deductive certainty. Independent of the certainty of the correctness of an analytic definition, there will also always be an uncertainty as to their *completeness.* This has to do with what it is that is actually tested against the linguistic data. Consider the example of the cat: suppose we are satisfied that all possible cats are furry. We can then conclude that furriness is an essential characteristic of cats – the simpler concept 'furry' is part of the content of the more complex content 'cat'.[40] We have thus singled out – analysed – one of the intensional constituents of the complex concept 'cat'. In similar fashion we could go on to analyse more constituents, but there is no way to determine whether we have isolated *all* of the constituents – we never have a guarantee of the *completeness* of an analytic definition.

[40] I am, of course, not making any claim as to whether this is actually the case. I am merely illustrating what *might* be part of the content of an empirical concept.

If we assume this account of the method of derivation of analytic definitions, we find that many of Kant's comments in the *Logic* make good sense. First, he explains why empirical concepts cannot be synthetically defined:

> **§103. Impossibility of Empirically Synthetic Definitions**
> Since the synthesis of empirical concepts is not arbitrary but empirical and as such can never be complete (for in experience ever new characteristics of the concept can be discovered), empirical concepts cannot be [synthetically] defined.[41]

Then he notes the uncertainty of the completeness of any analytic definition:

> **§104. Analytic Definitions by Analysis of a priori or a posteriori Given Concepts**
> All *given* concepts, be they given a priori or a posteriori, can only be defined through *analysis*. For given concepts can only be made distinct by making their characteristics successively clear. If *all* characteristics of a given concept are made clear, the concept becomes *completely* distinct; and if it does not contain too many characteristics, it is at the same time precise, and from this springs a definition of the concept.
>
> **Note.** Since one cannot become certain by any proof whether all characteristics of a given concept have been exhausted by complete analysis, all analytic definitions must be held to be uncertain.[42]

Kant also says explicitly that the method for deriving analytic definitions has to be by testing hypotheses. In §108 he gives "Rules for testing of Definitions", and then he goes on to "Rules for Preparing Definitions" where he states: "The very same acts that belong to the testing of definitions are to be carried out also in their making." That is: the testing procedure is the very procedure by which definitions are "made".

> To that end, therefore, seek (1) true propositions, (2) such propositions as do not already presuppose the concept of the thing in their predicate, (3) collect several of them and compare each of them with the concept of the matter itself to see whether it is adequate, and lastly, (4) see whether one characteristic does not lie in another or is not subordinate to it.
>
> **Note 1.** As is probably understood without a reminder, these rules are valid only of analytic definitions. Since here one can never be certain whether analysis has been complete, one may set up the definition on trial only and avail oneself of it only as if it were not a definition. Under this restriction one may yet use it as a distinct and true concept and draw corollaries from the characteristics of this concept. I am

41 Log. §103

42 Log. §104

> permitted to say: If the concept of the definitum appertains to something, the definition also appertains to it; but not conversely, since the definition does not exhaust the entire definitum.[43]

Given that these three ways of testing hypotheses constitute the method of conceptual analysis, we can begin to see why Kant would simply *present* the result of his analyses. The grounding of a conceptual analysis would have to be either a citing of a number of tests against uncontested judgements, i.e. failed falsifications of the intensional hypothesis, or an appeal to the readers linguistic intuitions: *indirectly* by claiming that we *would* say thus and so in such and such a situation or *directly* by saying that such a simpler concept must be contained is this or that complex concept; in any case there is little to offer as explicit support. Either we agree in our intuitions or we don't, and even several pages of failed falsification cuts little ice. Rather, in the face of analytic claims, the onus is on the opposition to provide counter examples. So we can, I suggest, perhaps excuse Kant for presenting his famous table of judgements without a shred of argument:

> If we abstract from all content of a judgment in general, and attend only to the mere form of the understanding in it, we find that the function of thinking in that can be brought under four titles, each of which contains under itself three moments.[44]

One might however be entitled to expect such analytic claims to be clearly flagged, and possible counter examples to be welcomed. On this score I shall make no excuses for Kant, as indeed I think he falls well short of the ideal. Instead I shall try to flag clearly any analytic claims made in this thesis, and also try to separate clearly the different kinds of arguments used in those parts of the *Critique* that I wish to draw on.

2.2 Explication

Just as we have an implicit grasp of the *content* of concepts, we must have an ability to apply them in actual situations. We show a degree of competence in concept application, and it seems reasonable to suppose that this competence could at least partly be regarded as implicit knowledge of application criteria and principles.[45] If so, we should be able to make some of this implicit knowledge *explicit* by the same kind of methods that we use to isolate the meanings of concepts, namely by testing against our actual observable

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43 Log. §109

44 A70/B95

45 To make clear the connection to Kantian terminology I shall sometimes refer to these as 'empirical criteria'.

practices and against our linguistic intuitions, only that in this case the *analysans* differs in that we are not after the intensional relations of concepts, but rather the actual criteria we employ in applying the concepts in judgements. In the following section I shall give reasons for holding separate meaning and application criteria. I shall also try to show how treating this as a tacit assumption for Kant, makes sense of a number of issues: Why the metaphysical principles are synthetic, rather than analytic (hence, that the analogies of experience are not conceptual truths) and why there is a need for schemata to connect categories and objects of experience.

2.3 Meaning and application criteria

It may seem tempting to read some sort of verificationism into Kant's arguments when these are construed as providing a refutation of external world-scepticism. Barry Stroud, in his "Transcendental Arguments" claims that Strawson's neo-Kantianism relies essentially on such a principle:

> If [the verification principle] is not true Strawson's argument is unsound.[46]

I think it is mistaken to think that Kant is committed to any form of verificationism, and that much more sense can be made out of his views, if we assume him to be committed instead to a form of "reliability principle". I shall not go into the debate about the merits of verificationism, but merely try to give more details to what I think that a tacit Kantian reliability principle must entail, then I shall try to show how it makes sense of certain of Kant's claims when these claims are discussed in the main part of the thesis.

I have claimed that by systematically testing hypotheses we can derive two distinct analytic procedures: *Conceptual analysis* to yield meanings, and *explication* to yield application criteria – i.e. "empirical criteria". It will prove important to realise the difference between meaning and application criteria. I assume that given the world, intension determines extension – meaning determines reference. However, knowing the meaning of a concept does not necessarily give us a way of knowing how to apply the concept in all situations. Our actual application criteria, might well fall short of guaranteeing that we always get at the correct reference of a concept – our conceptual competence may well be less than perfect. This is not in itself intended to be any very interesting thesis, but rather a reminder of a rather trivial fact, which is perhaps best

[46] Stroud 1982, p. 122

illustrated by an example. Take the concept of *authenticity* in art. We know perfectly well what this *means:* that a particular work of art was actually made by the artist to whom it is attributed. But this knowledge gives us no way to determine in a particular case whether a work of art is in fact authentic. Which is not to say that we have no way whatsoever to apply the concept. We have of course a lot of methods of telling whether, say, a painting is authentic that are *sufficiently reliable*. –Is the style of the painting consistent with other works by the same painter? –Does the painting show signs of ageing consistent with its alleged date? –Is the work mentioned in reliable sources? and so on and so forth. While we cannot be guaranteed to be right in every case, we have methods that give us a high degree of reliability. The occasional mistake is no great catastrophe, and it surely is no threat to the meaningfulness of the concept. Of course, if there was no general agreement about *any* cases of attribution of the concept, it would literally be useless, but so long as there is a high degree of general agreement about a reasonably large cases of judgements involving the concept – about application of the concept, it is not threat to the concept's meaningfulness and applicability that there be undecidable cases, nor that there be a degree of uncertainty about any particular attribution of the concept.

Now, this does not prove that for every concept there has to be a gap between meaning and application criteria. However, it does show that all that is needed for communication, hence all that can be deduced from the observable practice of our *using* a particular concept is that there are sufficiently reliable application criteria associated with that concept. It therefore seems fair to expect independent arguments for any case of guaranteed reference of a concept, any kind of certainty of concept application. The reliability principle suggests that there is at least a *logical* gap between meaning and application criteria, even if it might be argued that as a matter of fact in particular cases this gap might be closed, i.e. that for some concepts meaning and application criteria might come together.

I shall discuss this in more depth below, but I think that Kant's insistence on the need for schemata to link pure categories with empirical judgements, and the synthetic nature of the metaphysical principles shows that he is committed to the existence of a meaning gap.

Chapter 3 – Representations and objects

As mentioned, (p. 14) in a letter to Marcus Herz, Kant sees the Key to Metaphysics as the question of how representations are related to objects. We shall see that the Transcendental Analytic is concerned precisely with providing an answer to this question. It is however easy to misunderstand the focus of Kant's concern here, and think that he is interested in the relation between objects and representations *in general*, hence that he is presenting a *general* epistemology, and then draws conclusions about metaphysics from that. On this view, the Transcendental Deduction would be read as explaining how we can justify the notion of an object of representations in general, and of how ordinary empirical concepts relate to objects.

Such a reading would represent a serious misunderstanding of Kant's concerns. As is evident from the passages quoted on p. 15, Kant thinks we have a good common-sense model of how empirical representations are related to their objects. However, he does little more than allude to this explanation. In this chapter I shall try flesh out what this common-sense explanation is. I shall not try to give conclusive arguments for the correctness of this view, but rather to *present* it more fully than Kant does. Later on, I shall try to show that the presupposition of such a view is necessary to make sense of Kant's project in the *Critique.*

It seems clear at least that Kant holds to a *causal* theory of perception and an *abstractionist* view of empirical concepts. After first discussing the notion of a relation of representations to objects, I shall try to bring out what the Kantian versions of these two views must contain.

To find clues to Kant's position on these topics we need to look chiefly to his *Logic*, which was published in 1800, subsequent to the publication of both editions of the *Critique,* but whose thoughts clearly underlie the *Critique.* Quite often the *Critique* contains dense passages which are little else than brief summaries of points that are made more extensively in the *Logic.*

3.1 The ground of representance

I shall use the term *'representance'* for the relation between representation and object. I apologise for this ugly word, but it is useful to be able to refer unambiguously to the

relation of representation to object, which neither 'representation' nor 'representing' enables. Representance is thus that relation between a representation and its object *in virtue of which* that representation *represents* the object. The *representation* and the *represented* are then the *relata* of an instance of *representance*.

The question of the nature of representance has obvious relevance to debates about realism vs. idealism. If no account can be given for the relation between a particular representation and its purported object, then that may serve as justification for asserting the ideality and denying the reality of that which the representation in question purports to represent. Hence, the way in which the nature of representance is viewed will very likely have consequences for claims about the reality of purported objects or properties.

Let us go back to Kant's letter to Herz and the Key to Metaphysics. Kant enquires "What is the ground of the relation of that in us which we call "representation" to the object?"[47] Note that Kant is asking about the *"ground"* of the relation of representance. For his "single conclusion" Kant averted to the need for a *completely determined definition* of judgement in general,[48] but here is asking merely for the "ground of the relation". It is not obvious what is being asked for here, but it seems at least that Kant is asking for less than a complete and exhaustive *definition* of representance. I take it that Kant is to some extent asking for a partial, but not exhaustive analysis of the notion of representance, and to some extent asking an epistemological question: What is it in us or about us that sustains representance between our internal states and the external world – what sort of mechanism delivers representational states in us?

It is important in this context to understand what Kant is trying to explain and what he is offering as explanations. Kant thinks that in the case of sensations, perceptions and "empirical concepts", their representance-properties are readily understandable, and in case someone should come to entertain sceptical doubts about the existence of the purported objects, "we always have experience ready at hand to prove their objective reality".[49] And Kant does not say much more about the ground of the representance of *these* kinds of representations, so it seems clear that *this* cannot be the target of Kant's explanations. Kant is not trying to provide any substantial theory to explain how sensations can come to represent things in the world – rather he is *assuming* that they do

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47 See p. 14

48 See p. 20

49 See Kant's letter to Herz, quoted on p. 14–15, and the quotation from the introduction to the Transcendental Deduction on p. 15

so, and *using* this fact as part of an *explanation* of how perceptions and empirical *concepts* – general representations – come to have representance-properties. This commits Kant to the view that although we might not yet have a full explanation – a *complete* theory – of the representance of sensations, we have at least a *partial* understanding of it. We know a great deal of what is involved in the phenomenon of sensation, and causation and physical facts concerning our sense organs are going to figure essentially in that theory. We do not yet have a complete understanding of everything involved in sensation, but we have good reasons to believe that in due course we may come to have it. Further, since he claims that experience can always provide examples to *demonstrate* the objective validity of empirical representations – he is committed at least to the view that so far, there is nothing about what we know of sensation that gives us grounds for any sceptical doubts concerning empirical representations.

This way of understanding Kant's views makes good sense in terms of bringing out the tacit premises of the arguments of the *Critique.* However, it is of course also relevant whether, in holding these views, Kant is actually correct, and if recent developments in these areas give us reason to modify our hopes and expectations of these phenomena being ultimately understandable.

In the following I shall give some independent arguments in support of Kant's views. In doing this I shall by no means try to get anywhere near a *complete* theory of sensation and perception. My aim is purely to show that we have quite a good idea of some of the vital ingredients of such a theory, and to make it plausible that a complete understanding of these facts is not in principle beyond us.

In doing so I am *not* trying to answer any of the "hard" questions about awareness, consciousness and the like, but merely try to investigate some of what would be required in terms of *natural* – broadly physical[50] – relations between internal and external states for those states to stand in a relation of representance. Thus, we will at best find some necessary, but certainly not sufficient conditions for representance. The aim is the rather more modest one of showing that at least there is no reason to believe that our representations would fail to meet any of the necessary conditions for representance that we can deduce. I go on to sketch how Kant's writings outlines and hints at how a theory

[50] I am not here committing to any view as regards whether all natural properties are physical properties, whether they supervene on physical properties or whether the natural properties make out *all* the properties there are. Clearly, most natural properties are physical properties, and some of these play an important role in sensation.

of the representance of empirical concepts can be given, assuming the representance of sensations. Given the actuality of the representance of sensations we can explain the representance of concepts, roughly as being inherited from the sensations from which they are abstracted.

The hope of finding the Key to Metaphysics, then, is that when we understand the ground of representance of ordinary empirical representations, we shall also be able to understand the ground of representance of metaphysical representations. That is, we shall be able to understand and explain how pure concepts and principles are related to their objects.

We should note that Kant writes against the backdrop of an *imagist* view of representance, in a tradition which includes at least Augustine and Hume. Mental states represent in virtue of *resembling* their objects. Jerry Fodor, who has written about this topic in the modern guise of "psychosemantics" notes in a recent article that this view is fundamentally flawed:

> One could say, more or less in the spirit of Hume, that what relates a mental representation to its truth condition is that the former *pictures* the latter…[51]

> Well, we all know what's wrong with *Hume's* theory of meaning; it's precisely that there is no way of defining 'pictures' (or 'resembles' or any of that group of notions) which makes it come out that mental representations do picture only their truth conditions.[52]

Kant might well have been aware of this. He wrote the *Critique* partly as an answer to Hume, and his insisting that the ground of representance is the very Key to Metaphysics and is something that both he and others "had failed to consider" suggests that he was aware of the shortcomings of the imagist theory of representance. At any rate Kant is certainly not *committed* to an imagist view of representance, and I shall attempt to show that that we can glimpse the outline of a much more promising view, which is fully consistent with the remarks Kant makes.

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51 Fodor 1990, p. 317

52 Op. cit. p. 318

a) Kant's background assumptions

Before we start investigating into grounds of the relation of representance, we should clarify Kant's terminology of representations, as it diverges considerably from modern usage. First we should note that Kant defines *perception* as *representations with consciousness.*[53] This means that my occurrent recollection of the taste and texture of ripe strawberries on a hot summer afternoon counts as a *perception* in Kantian terminology, even when the time of writing is a rather chilly winter morning, and there is not a single strawberry anywhere in sight. To avoid confusion, I shall refer to Kantian "perceptions" as 'conscious representations'.

Conversely, the Kantian term that comes closest to a *modern* understanding of perception is 'intuition'. *Intuition* is defined as one of the two species of *cognition.* A cognition is an objective conscious representation, and an intuition is a cognition that is singular and immediately related to its object. Where intuitions perhaps differ from perceptions in the modern sense is that Kant claims that there are also pure and *a priori* intuitions. Whatever that means (and that is an extremely interesting question in its own right), it seems hard to make sense of perceptions being pure or *a priori.* Fortunately, pure and *a priori* intuitions need not concern us in the context of this thesis, so I shall use 'intuition' and 'perception' interchangeably. I prefer 'perception', as that will be closest to ordinary usage, but sometimes, as when quoting or commenting directly on Kant's texts, it is natural to use 'intuition'.

b) The variety of representations

It is clear from Kant's writings that the class of things described as representations[54] is quite heterogeneous. *Perceptions, sensations, cognitions, concepts* and *intuitions* are all defined explicitly as representations,[55] and it is clear by implication that judgements are also thought to be representations.

Given the wide diversity of things that have representational properties, it would seem highly unlikely that they all bear the same kind of natural relation to their object. For one thing, the number of relata are clearly different between cases of particular and general representations respectively: There are by Kantian definition two kinds of

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53 A320/B376

54 I use 'representation' simply as short for 'that which is representational'. I am not committed to any reification of representations – that they are some sort of discrete or self-subsistent things. Similarly for the various *species* of the *genus* 'representation' – sensation, perception etc. – I am not committed to a reification of any of these.

55 See A320/B376-7

"objective representations", perceptions and concepts.[56] Since a perception is related to a *particular* object or set of objects while a concept is *general* and related to a non-denumerated *class* of objects, it would be safe to assume that the relation sustaining the representance of perceptions is simpler than that of concepts.[57]

3.2 Receptivity and sensation

I take it that in every perception there must be an element of sensation. The senses provide our only means of acquiring information about our immediate environment, and Kant holds that all human cognition must be in some way related to sensibility. Let us try, therefore, to bring out some of what is required of sensory states, for them to be able to represent the environment to the creature whose sensory states they are.

a) Sensation and environment

It seems clear that for us, as indeed for all sensate animals, – behaviour – is not simply an *immediate* effect of environmental causes, but mediated in some way by the animal's internal states. This seems to be an integral part of the very idea of being *sensate*, that some internal states of the animal serve to govern the animal's behaviour. When talking about *internal states* in the context of this discussion I shall restrict that to meaning those internal states which play an immediate role in governing the behaviour of the animal. Thus, the animal's body temperature, while in one sense an internal state, is *not* an example of what I have in mind here, whereas sensations, feelings and emotions are. *Sensations* are clearly a species of these more narrowly construed internal states, and we shall pursue our inquiry into how sensory states can be able to represent the environment.

If the animal is to survive and flourish in its environment, its behaviour must clearly be appropriate to the various states of its environment. This means that for animals that have internal states governing their behaviour, there must be some kind of functional link between internal states and behaviour, to produce the right kind of "output"; and also some kind of functional link between states of the environment and the internal states,

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[56] Judgements are logically dependent on both perceptions and concepts, and the representational properties of a judgement is explainable in terms of the representational properties of perceptions and concepts respectively.

[57] Which is *not* to say that perceptions are simpler than concepts. I cannot go into it in detail here, but both normal usage of 'perception' and Kant's statements about "intuitions" imply that a perception always has a conceptual element, so that we might talk about perceptions and *mere* concepts. If one is looking for a dichotomy, it should not be drawn between concepts and perceptions, but rather between concepts and *sensations*, and perception could only be adequately explained by making reference both to concepts and sensations.

constituting the proper "input". It is this second link we are interested in here, the link between states of the environment and the narrowly construed internal states: What must be the case with regards to those internal states, for the animal to be able to successfully interact with its environment? To bring this out in its barest essentials, let us imagine a very simple animal whose behavioural repertoire consists of a very limited set of sequences of instinctive motions. In the presence of food, the animal tries to eat it, in the presence of excess heat or cold, it moves away, in the presence of an individual of the opposite sex of the same species it tries to mate and so on. Now, if this animal is to survive in its environment its behaviour must clearly be "in tune" with it – it must show the appropriate response to different environmental situations. It must *not* try to eat its mate, move away from food etc. And if *that* is to be possible, then the internal states governing its behaviour must first themselves be in tune with the environment – the internal state must *track* the environment. The behaviour-governing internal states had better be regularly *updated* such that they can govern behaviour appropriate to the changing state of the environment. If there is no more food, then the animal had better stop trying to eat. Another way of saying this is that there must be a *correspondence* between internal states of the animal and external states of the environment. Now, what sort of mechanism, what sort of natural relation could sustain a correspondence between internal state and environment? This is asking for the ground of the relation of sensation and object in such a simple animal.

It is clear that in order to survive, the animal would need the correspondence to be sustained by a reliable mechanism. A *perfectly* reliable mechanism would be one that ensured that *every* change in the environment was matched by a corresponding change in the sensory state, and that no change occurred in the sensory state unless there had been a corresponding change in the environment. Such a perfectly reliable mechanism would probably be useful for the animal, but it is clear that it is not necessary. If the animal sometimes displays eating-behaviour in the absence of food, it will probably not have any fatal consequences. Nor will its occasional failure to attempt to mate even in the presence of a suitable candidate be a bar to its survival. All that is required is a *sufficiently* reliable mechanism, ensuring that the animal got it right enough of the time. Besides, it is very hard to imagine how a *perfectly* reliable mechanism – one which would *never* malfunction – could work. Hence, we should do better in looking for a sufficiently reliable mechanism. But again, what sort of mechanism would that be?

That clearly depends on the kind of environment in question. If the animal is living in a very simple environment displaying only regular predictable changes, then the

animal could in principle be running a "program". Its internal state could change regularly, influenced by nothing but internal causes, following a sequence that matched the changes in the external environment.[58] Such a mechanism would however be extremely vulnerable. Any unpredicted change in the environment, or any slight malfunctioning might easily bring it irreparably "out of synch". It is also very hard to envisage how such a mechanism could be set up: how the initial synchronisation with the environment would take place, not to mention how the sequence would be determined. In any case, *our* environment – *this* world – is clearly *not* an environment for which such a mechanism would be suitable. We need a mechanism that is sensitive to unpredictable changes in the environment. Thus, the obvious candidate for a sufficiently reliable mechanism is that there be a *causal* relation between the environment and the animal's sensory state. Of course, as a matter of fact we do find just such a causal mechanism in all earthly animals, namely in the form of *sense organs.* The sense organs could properly be described as causal updaters of the relevant internal states. And the sensory states are just those internal states that are directly updated by the sense organs. These might of course in turn effect further changes of other internal states: the sight of a mate might occasion a state of arousal, the sight of a predator might occasion a state of fright and so on.

A simple, causal relation between environment and sensory state would ensure that there was no change in sensory state without a corresponding change in the environment, though there would be no guarantee conversely that every change in the environment resulted in a corresponding change of sensory state. The causal relation is such that the same kind of cause (change in environmental state) always has the same kind of effect (change in sensory state), but not that a particular change in sensory state is always caused by the same kind of change in environmental state. Thus we should expect that an animal sometimes behaves inappropriately, e.g. tries to eat what is not food. As long as this does not happen too often, it will not be a bar to that animal's survival.

There is thus a very interesting parallel between what we can infer about the relation of representance between sensations and environment and the relation between meaning and application criteria of concepts that was discussed in section 2.3,[59] namely that we are not entitled to infer from the fact that a simple sensate animal successfully interacts with its environment that there is a *perfect* correspondence between its sensory states and the environment, only that there is a *sufficiently reliable* correspondence. Again, comparative reliability is the most that we can reasonably infer from the observable facts. Given the

[58] This, of course, would be a version of pre-established harmony.

[59] See p. 31

additional premises that (a) a causal relation could deliver a sufficiently reliable correspondence in a moderately regular environment and (b) that sensate animals do indeed have causal mechanisms that occasion internal changes as an effect of external changes, the hypothesis that a causal relation involving sense organs is a vital part of the ground of representance of sensation in simple animals, is a very strongly supported hypothesis.

Note that we are not justified in claiming that this causal relation *just is* the ground of representance. For one thing it is clearly not *sufficient* for uniquely identifying cases of representance. It is possible, for instance, that the magnetic polarity of some weak electrical currents in my body are affected by strong electromagnetic fields in my environment. While this electrical state of my body could in a weak sense be said to represent my environment, it is clearly not an internal state in the more narrow construal that I am enquiring into.[60] The electrical state is not a conscious state, and so is clearly not a *conscious representation*[61] which is what we are after.

What is indicated by the above arguments is that a necessary condition for representance is a sufficiently reliable correspondence, and the most likely candidate for a mechanism to deliver sufficient reliability is a causal one.

However, it seems to me that this would be making the task more difficult than is necessary. In noting that the causal relation was not sufficient to identify what internal states of an animal count as *representations*, we allowed ourselves no assumption about what representations are, and no prior means of identifying them. But this is unduly harsh. Though we might not have a theory of *how* we do this, surely we know our own representations when we have them. My having a visual impression as of a green apple is something I can readily identify when I have it, and it is the relation of *this* to the actual green apple that I am concerned with. I can identify and individuate representational states, and I am asking for the ground of *their* relation to their objects.

Of course, one *could* be asking about the nature of representational states and try to formulate theories specifying necessary and sufficient criteria for an internal state of an animal being a *representational* state, and this would no doubt be a worthwhile and extremely interesting task, but it is *not* the one I am trying to perform here.

Given this assumption, that even in possible *lieu* of a theory, we are able at least to a considerable extent to identify and individuate the representational states in our own case

[60] See p. 38

[61] See p. 37

– that we do know human representations, we can start to make headway in an account of representance that will encompass more than just mere sensations.

b) Human sensibility and sensation

Even if the rather simplistic model of the animal with a causal sensory mechanism is accepted, there is still quite a long way to go before we have anything even remotely approaching an account that can accommodate the full richness of human experience. My aim here shall be rather more modest, though – to ask simply if this way of thinking about the rather narrow case of sensory representance is fruitful also in the human case. One important shortcoming is that if we imagine an animal's internal states to consist exclusively of sensations, its entire internal "life" would be *passive*. Given the state of the environment, the animal's internal states would be given, and there could be no change in the internal states without it being occasioned by a change in the environment. In contrast, our human consciousness is to a large degree *active:* We can *choose* to think about the future, to ignore our current pangs of hunger, to think hard about a philosophical problem etc. Obviously, none of this can be explained by a simple causal story about sensations. That, however, is not to say that the causal story could not be an adequate explanation of *part* of our representational states. If, as indeed seems to be the case, part of our consciousness is passive, then there is so far no reason why this element could not be explained along the lines of a causal sensory mechanism. And our sensations do indeed seem to be passive. If there is a green apple in front of me, the lighting conditions are favourable, my eyes are functioning normally and so on, it seems that I will inevitably have a sensation as of a green apple, and there is nothing I can do to change that, except to manipulate my environment and remove the apple. The notion of a passive faculty[62] of sensibility is a central assumption for Kant, and this plays an important role as a premise in his discussions about pure concepts and the like.[63]

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62 I use the term 'faculty' to mean no more than a capacity of some sort, with no commitment to there being any discrete "organ" or mechanism sustaining this capacity. I use the term 'faculty' rather than 'capacity' because the term is frequently used by Kant in, I believe, the same sense.

63 Strawson, in *Analysis and Metaphysics* claims that "the notion of causal dependence of the experience enjoyed in sense-perception on features of the objective spatio-temporal world is *implicit* from the very start in the notion of sense perception, given that the latter is thought of as generally issuing in true judgements about the world." (Strawson 1992, p. 61 my italics) Thus, for Strawson the causal element in perception amounts to some sort of *conceptual* truth. I make the slightly weaker claim that the causal dependence is the *best explanation* of how our sense perception can issue in true judgements about the world.

Let us first return again to Kant's letter to Marcus Herz, which was mentioned in the introduction,[64] where Kant reports on his preparations for writing the *Critique.* Here, it is explicitly clear that Kant thinks that sensations ("passive or sensuous representations") are related to objects as effects to causes, and that this gives a perfectly good explanation of the ground of the relation of representance for sensations:

> What is the ground of the relation of that in us which we call "representation" to the object? If a representation comprises only the manner in which the subject is affected by the object, then it is easy to see how it is in conformity with this object, namely, as an effect accords with its cause, and it is easy to see how this modification of our mind can *represent* something, that is, have an object. Thus the passive or sensuous representations have an understandable relationship to objects, and the principles that are derived from the nature of our soul have an understandable validity for all things insofar as those things are supposed to be objects of the senses.[65]

It is also evident that Kant held on to this view of sensation throughout his writing of the *Critique.* Note that in the quoted passage Kant talks about the subject being *affected* by the object as being equivalent to having sensory states that are effects of external causes. The same language is used in the introduction to the *Critique,* where sensation is defined as "the effect of an object on the capacity for representation, insofar as we are affected by it".[66] The characterisation of sensibility as a *passive* faculty (in contrast to the *active* faculty of understanding) is also pervasive in his description of sensibility as *receptivity* in contrast with the *spontaneity* of understanding.[67]

Note that in claiming that sensibility is passive – receptive – I am not committed to the view that sensibility – sensory states – are affected only by external causes – changes in the environment. Indeed it seems plausible in the human case that our sensory states might well be affected also by internal causes; think of hallucinogenic drugs, extreme tiredness etc. under which conditions we may well suffer from hallucinations and illusions. It may well be debated, of course, whether hallucinations and illusions are due to inappropriate sensory states or to improper understanding – most likely there will be elements of both, I presume – but there is at least no reason not to think that in some cases there might be an element of sensory states that do not correspond to reality. This, of course, does not weaken the case for thinking that sensibility is essentially a passive

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64 See p. 14

65 10:130, my underscoring.

66 A19/B33–34

67 See A50–51/B74–75

faculty. I can no more choose not to be the subject of a drug-induced hallucination[68] than I can choose not to have a sensation as of a green apple when there is one in front of my open eyes.

3.3 Concepts and spontaneity

As we have seen, sensations comprise at best only some of our representations. While sensations presuppose the actual presence of their particular object,[69] we also have a capacity for representing properties and classes of things *in general*, by way of *empirical concepts*. Now, we need also to examine the relation of representance of concepts in general to their objects if we are to be prepared for the ultimate aim of understanding how metaphysical representations, i.e. pure concepts, relate to their purported objects. So, we need some kind of a theory of concepts.

Elaborating a theory of concepts may be either of two quite different investigations. One alternative is to enquire what it is to possess and apply a concept. What are the necessary and sufficient criteria for being regarded as a concept-possessor? This will in effect be to try to determine the meaning of the concept of 'concept', and is an analytic enquiry – a search for a definition. The other alternative is to take the meaning of concept as *given* (if not exhaustively defined) and to enquire into what sort of mechanisms and capacities an animal must have if it is to be able actually to apply concepts. It should be clear by now that it is the latter, epistemological, task that is interesting in the context of the *Critique* and indeed of the present thesis.

The part of the *Critique* where Kant is tackling the question of the Key to Metaphysics is the "Transcendental Logic". Now, it seems clear that what Kant termed 'Logic' is closer to what would currently be classified as epistemology, than to the essentially synthetic enterprise of current formal logic. He defines "General logic" as a *critique of cognition.*[70] Recall that critique of pure reason[71] is epistemology of metaphysics. A critique of cognition in general must then be closely related to epistemology in general. Accordingly, one of the topics for general logic is the question of how concepts can represent objects. So, we are concerned neither with *defining* the concept of concept, nor with giving a full theory of how conceptual faculties arise or

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68 I may not *believe* that there is a pink elephant crushing my head, on the morning after a particularly uninhibited night, but that will not remove the *impression* of there being one.

69 A50/B74

70 Log. p. 23

71 That is: the discipline denoted by that description, in distinction from the eponymous book by Kant. See p. 16

develop in humans, merely with explaining the relation of representance that concepts bear to objects.

> [I]t is not for general logic to investigate the *source* of concepts, not how concepts as representations arise, but solely how *given representations become concepts in thinking* […][72]

Again, the aim is not to give a complete and exhaustive theory of human conceptual capacities. I take it to be an observable *fact* that we *do* use concepts, so we clearly do not need to prove that we are able to do so. The aim is the much more modest one of taking as a premise that we are able to and do use concepts and make some limited inferences as to some necessary features of our cognitive capacities.

Let us proceed, therefore, with investigating what sort of theory of the representance of concepts that might be implicit in Kant's writings.

a) The facts about concepts

We shall start with listing some the observable facts of our use of concepts which a theory should be able to explain. As in Kant's theses, these will serve as *factual premises.* They are among the *explananda* of a general theory of the representance of concepts, from which conclusions might be drawn as regards any possible valid representance of *pure – metaphysical* – concepts.

Note again that Kant thinks that the representance of ordinary empirical concepts is uncontroversial, and that it is only in the case of pure concepts that substantially new theorising is required:

> The empirical concept springs from the senses through comparison of the objects of experience and receives, through the understanding, merely the form of generality. The reality of these concepts rests on actual experience, from which they have been extracted as to their content. Whether there are *pure concepts of the understanding (conceptus puri)* which, as such, spring solely form the understanding, independent of any experience, must be investigated by metaphysics.[73]

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[72] Log. §5, n.1

[73] Log. §3, n.1. The investigation of the existence or otherwise of pure concepts is in fact carried out by Kant in the *Critique,* so it seems that he should have said that this must be investigated by, in effect, the epistemology of metaphysics (see p. 16). It would seem that the existence of metaphysical concepts is a presupposition of metaphysics proper.

But this is to anticipate the discussion somewhat. Let us return to what must be explained by a theory of the representance of concepts.

We should note that any explanation of the representance of concepts will need to be significantly more complex than the explanation we have just seen of the representance of sensations. In the case of sensations we could assume that a particular sensory state represents a particular environmental state, that there is an *immediate,* one-to-one relation of cause-and-effect. This will clearly not be available in the case of concepts, since a fundamental feature of a concept is that it is *general* – it represents not a particular object, but a general property or an "open-ended" class of things. The relation of representance of concepts to their object is consequently considerably more complex than that of sensations. We shall look at some of the facts of this relation, in the first instance with regard to ordinary *empirical concepts*.[74]

I shall claim that a theory of representance of empirical concepts should accommodate at least four facts:

1. Concepts have extensions
2. Concepts have intensions
2. Concepts are knowably extensionally related
4. Concepts are knowably intensionally related

I think it is quite clear that Kant too holds these four claims to be observable facts about concepts and our use of them. Partially, this is explicitly stated in his *Logic*, which should be regarded as an analysis of the observable employment of our reasoning faculties;[75] partially it is implicit in claims he makes in the *Critique.* Below I shall try to give independent support for each of these claims, and also give some references to passages in Kant's work which suggest that these correspond to views held by Kant.

1. Concepts have extensions

Fundamental to our use of empirical concepts is that we *apply* them to the world. My having the concept 'green' entails that I am able to say correctly of at least of *some* objects that they are green and to say correctly of at least some objects that they are not green. We say that certain parts of the world *fall under* a concept. That which falls under a concept is termed its *'extension'*. So the extension of the concept 'green' is the

[74] Having done this, we shall also be in a position to give a more precise definition of 'empirical concepts'

[75] See p.44

collection of green things insofar as they are green.[76] Kant, uses the term *'sphere'*, which he treats as synonymous with 'extension'. In the early passages of the Logic, we find:

> **§8. Magnitude of the Extension of Concepts**
> The more things stand under a concept and can be thought through it, the larger its extension or *sphere* …
> The more things that can be represented by a concept, the greater its sphere.

2. Concepts have intensions

With the idea of the application of a concept comes the notion of *correctness.* In accounting properly for the application of a concept to objects, it is not enough to state the complex fact that the concept is actually applied to such and such a class of objects. Integral to the notion of a concept is that there is something in virtue of which it *ought* to be applied to some objects and not to others. From the fact that somebody actually applies a concept to a particular object on a particular occasion, it does not follow that the concept is *correctly* so applied. Giving a causal story about a concept detailing how that concept actually comes to be applied by different persons on different occasions would necessarily leave something out, namely whether the concept is *correctly* so applied on each occasion. It would seem that there are irreducibly *normative* facts concerning concepts. These normative facts which specify to what objects a given concept *ought* to be applied are termed *intensional facts* or simply *intensions.*

That concepts have intensions also partially explains why we have an indefinite ability to apply concepts in ever new kinds of situations. My ability to apply the concept 'green' correctly outstrips the number of green objects I have so far been acquainted with, and I will in most cases be able to judge correctly of a hitherto-unknown object whether it is green or not. This suggests again that there are normative facts about how a concept *should* be applied, that there is some form of *principle, rule* or *norm* determining whether or not a concept should be applied to any given object; that there is some criterion or criteria by which I judge the greenness of things, and that I have at least some implicit grasp of this criterion or criteria. This is of course not to claim that these criteria allow of being spelled out in any kind of explicit "test procedure" or "rule" beyond the obvious platitude that I judge green things to be green in virtue of their greenness. It

[76] Again, I am not committed to a reification of extensions. I do not claim that extensions are objects or form distinct entities, sets or classes. A collection is not taken to be anything over and above those things of which it consists.

is however to claim that there is some general property[77] of green things that enable us to judge of them that they are green and that we have some corresponding ability or capacity that enable us to judge of green things that they are green. To say that we have an ability to apply the concept 'green' correctly just is to say that we know the intension of the concept 'green' whether this knowledge be explicit ("knowing-that") or merely implicit ("knowing-how").

Kant's talk of concepts as *containing* "characteristics", which will be further discussed below, reflects a commitment to concepts as having intensions that determine extensions:

> **§7. Intension and Extension of Concepts**
> Every concept, *as a partial concept,* is contained *in* the representation of things; as a *ground of cognition,* i.e. *as a characteristic,* it has these things contained *under it.* In the former regard, every concept has an *intension* [content];[78] in the later, it has an *extension.*

A *cognition* is a representation of an object. Kant talks of "characteristics" as constituting intensions of concepts, and as *grounds of cognition*. I take this to imply that the intension of a concept is that which determines its extension. What is contained *"in"* the concept determines what is contained *"under"* it.

3. Concepts are knowably extensionally related

The extensions of empirical concepts are not discrete, but typically "overlap". Some things are both green and round, some are red and round, some are green and square and so on. Since we are able to judge of particular things their simultaneous subsumability under *different* concepts, we have some knowledge of the extensional relations of concepts. To deny that we have some knowledge of extensional relations of concepts would amount to claiming that we can never attribute more than one concept to an object. Any judgement to the effect that some objects falls under more than one concept amounts to some knowledge of the relation of the extension of those concepts.

4. Concepts are knowably intensionally related

We know of the co-applicability or not in the actual world of some concepts, so we have some knowledge of the extensional relations of concepts. We know that some objects are

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77 Whether this property be "real" or "ideal" or indeed whether such a distinction makes sense is not relevant to the current discussion.

78 Translators' addition

both *A* and *B,* both green and round, say. If we also know of some concepts *'A'* and *'B'* e.g. that no object could *possibly* be both *A* and *B,* that there is no possible world in which an object is both triangular and square for instance, then that could only reasonably be explained by our having also some knowledge of *intensional* relations of concepts, since intension determines extension.

In chapter 7 I shall give arguments to show that we *must* have some such knowledge. Here I shall merely point out that we trivially seem to know many such relations. Nothing *could* be a stallion and fail to be a horse, for instance. Even though there is plenty of empirical confirmation to be found for this claim, that is not what we rely on in asserting the *necessity* of this claim. We *know* that we are not going to find a stallion which is not a horse no matter how hard we look, and that we *would not* find one, no matter what the world might be like.

Now, Kant defines the difference between analytic and synthetic judgements *in intensional terms,* namely that analytic judgements are those where the predicate concept is "contained in" the subject concept, synthetic judgements those where it isn't.[79] Any knowledge of whether a judgement *is* in fact analytic or synthetic thus amounts to some knowledge of intensional relations of concepts, and since many of Kant's arguments rely on claims of some judgement or other being analytic or synthetic he is clearly committed to our having some knowledge of intensional relations of concepts.

b) The representance of concepts

These factual premises are in general not stated explicitly in the *Critique,* but they form much of the tacit premises for *inter alia* claims about analytic and synthetic judgements. However, we do find many of these premises clearly stated in the *Logic*, where we also find a comparatively full account of Kant's explanation of the valid representance of empirical concepts. The basic idea is that concepts are derived from sensations by a process of *comparison, reflection* and *abstraction*

Let us first return to the passage quoted at the beginning of this section. Here Kant states that "the empirical concept springs from the senses through comparison of the objects of experience … The reality of these concepts rests on actual experience, from which they have been extracted as to their content."[80] The representance of an empirical concept is determined by its "content" which is said to be extracted from actual experience. The basic idea seems to be that concepts stand in relations to kinds of

[79] See. e.g. A6–7, B10–11

[80] Log. §3, n.1

sensations, and inherit their representational properties from sensations. The specific relation a particular concept has to kinds of sensations constitutes its empirical content.

Further, these relations can be regarded as being established by a process of *comparison, reflection and abstraction:*

> **§6. Logical Acts of Comparison, Reflection and Abstraction**
> The logical acts of the understanding by which concepts are generated as to their form are:
> **1)** *comparison,* i.e. the likening of representations to one another in relation to the unity of consciousness;
> **2)** *reflection,* i.e. the going back over different representations,[81] how they can be comprehended in one consciousness
> **3)** *abstraction* or segregation of everything else by which given representations differ.[82]

It is unclear what Kant means by a "logical act" here. If he is committed to the view that these are acts we consciously and deliberately *perform,* there would seem to be a price to pay in terms of plausibility; but it is not necessary to assume that these are *actual* generative acts which occur as temporal processes, nor that Kant thinks they are. 'Logical Acts' can charitably be read simply as a sort of explanatory metaphor. We can regard concepts *as if* they were generated by conscious, deliberate acts of this kind, but the importance is the *relations* being established by these supposed acts, not the acts themselves. Maybe that is what is meant by calling them *logical* acts.

Following the passage quoted above, Kant gives one of his sadly all too rare concrete examples. Here he uses the idiom of consciously comparing, reflecting on and so forth, but I think it is safe to read this non-committally. It is the *relations* being determined by these acts and our ability to apprehend such relations that do the explanatory work, not the actuality of the acts themselves.

> **Note 1.** In order to make our representations into concepts, one must thus be able to *compare, reflect* and *abstract,* for these three logical operations of the understanding are the essential and general conditions of generating any concept whatever. For example, I see a fir, a willow, and a linden. In firstly comparing these objects, I notice that they are different from one another in respect of trunk, branches, leaves, and the like; further, however, I reflect only on what they have in common, the trunk, the branches, the leaves

[81] Hartman & Schwartz translates *'Vorstellung'* as "presentation". Though they give reasons for doing so, I am not persuaded by them, and to keep a consistent terminology I have amended their translation when quoting it in this thesis.

[82] Log. §6

> themselves, and abstract from their size, shape and so forth; thus I gain a concept of a tree.[83]

Crucial here is the notions of *difference* and *resemblance*. Difference and resemblance entail *degrees by* which and *respects in* which things differ and resemble each other. For instance the strawberry and the tomato resemble each other with respect to their red colour, but differ with respect to their surface texture; the green apple and the tomato resemble each other with respect to their smooth texture but differ with respect to their colour. Now, Kant claimed that "empirical concepts springs from the senses through comparison of the objects of experience", and in *comparing* objects of experience, we determine precisely the ways in which they differ and resemble each other, so such *sensible respects in which objects can differ or resemble each other,* clearly play an important role in any explanation of the representance of concepts. Concepts, after all, are *general* representations; they represent a collection of objects in virtue of something all of the objects have in common, i.e. a respect in which they resemble each other. This is not made fully explicit in Kant, but it seems to be the best way of understanding the thought behind Kant's terms *'characteristic'* or *'mark'*[84] and *'determination'*.

We are clearly able *simply to recognise* a vast number of ways in which objects may differ or resemble each other – we immediately recognise sameness of colour of the tomato and the strawberry, or the sameness of shape of the wheel and the plate. This is to say that there are *sensibly discernible ways* in which objects may differ or resemble each other – and I shall refer to these as *basic sensible properties.*

For some of these, like colour and surface texture, we can assume that there is a quite simple and straightforward correspondence between properties of objects and kinds of sensory states. Red objects may be supposed typically to cause a visual sensory state *as of* redness present, smooth objects may be supposed typically to cause a tactile sensory state *as of* smoothness present and so on.

But we are also able simply to recognise properties that require a much more sophisticated mechanism in order to be reliably detected. Prime among these are *shapes.* Without much effort, we are able in favourable conditions simply to recognise objects as spherical, cubic, rhomboid, rectangular, disc-shaped, flat, bulging and what have you. But to devise a *mechanism* for this (and by the same token, to explain how our sensory-

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83 Ibid.

84 *'Merkmal'*. Hartman & Schwarz use the term 'characteristic' in translating the *Logic,* while Guyer's & Wood's translation of the *Critique* has 'mark'.

cognitive faculties are able to achieve it) is exceedingly complicated. One major challenge is the fact that a physical object of a particular shape will present a vast number of *different* aspects to an observer – a cylinder looks very different from the side than from the end; and objects of very different shapes may have identical aspects – there is not much difference between a cube and a pyramid if all you see are their bases. This means that for a mechanism reliably to *detect* shapes (and for us to *recognise* them) it is not enough for instance simply to react to specific patterns of retinal stimulation – since these don't map onto shape-properties of seen objects in any simple way. This means that in our perception of shape-properties there is clearly a high degree of very complex information processing going on. This processing must among other things take as input temporal variation in the sensory stimulus (shapes with identical aspects can be distinguished by how their aspects vary over time when the objects are in motion relative to the observer. For instance, the pea and the pencil seen from the end might look very similar in poor light, but as soon as you move your head to the side, you will easily see which is which.)[85]

Now, precisely *how* we are able to recognise such aspect-variant properties, what organs and mechanisms are involved in the information processing and how this processing takes place – whether some or all of it is innate or whether it needs to be

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[85] I find it plausible to think that this need for information processing may have been one of Kant's motivations for claiming that there is a pure synthesis of sensibility. In a footnote to the 1st edition Transcendental Deduction, Kant criticises the idea that the senses can passively furnish us with "images of objects". His point here could well be just the problem of aspect-variable real properties: (Kant's name for the faculty of synthesis is "imagination")

> No psychologist has yet thought that the imagination is a necessary ingredient of perception itself. This is so partly because this faculty has been limited to reproduction, and partly because it has been believed that the senses do not merely afford us impressions but also put them together, and produce images of objects, for which without doubt something more than the receptivity of impressions is required, namely a function of the synthesis of them. (A120 n.)

The fact that some information processing – some "synthesis" is required for perception of spatial (and temporal) properties, seem to have led Kant to the conclusion that space and time are pure forms of sensibility, corresponding to nothing objective. The idea seems to be that since we need to process – to synthesise – sensory input in order to have spatial properties presented to us, these spatial properties are *imposed* by our sensory-cognitive systems on the sensory input which is inherently non-spatial. Hence spatiality and temporality are products of our sensory-cognitive systems. I think this conclusion should be resisted. It seems much more natural to think of the information processing as a method of *detecting* real properties based on the input from the sensory organs, hence as a system geared towards tracking *real properties.* I can see no reason why this is any less of a credible explanation of the fact of necessary synthesis than the idea that spatiality (and temporality) is *imposed on* the sensory input. And it would seem reasonable that the burden of evidence is on the anti-realist – i.e. the denier of the reality of spatial and temporal properties. However, I shall not try to prove that the "synthesis of perception" does not give rise to any pure representations, but I shall claim that whatever it does, it is insufficient and inessential to establish any claims about the pure concepts. This will be discussed in detail in section 5.2b), see p. 106

learned or otherwise acquired – is clearly a topic for cognitive science, and there is every reason to believe that we shall continue to gain an increasing knowledge of the details of this. But however our sensory-cognitive systems help to achieve this, we *are* clearly able simply to recognise objects as having specific shape-properties. The most natural way to think of this is that a sensory state being a result of sensory stimulus and information processing *presents* objects to us as having spatial and other properties. I am going to refer to this feature of sensory states as their *presentational content.* This is really saying little more than what was argued in section 3.2a) that there must be a correspondence between sensory states and environmental states (see p. 42) and taking into account that the relevant environmental states must be specified in terms of properties that are aspect-variable. Again, we are not here going to go into the details of *how* it can be possible that sensory states have presentational content, we are merely noting that this seems to be a necessary condition for the possibility of recognising aspect-variable properties like physical shape. Since we *are* able to recognise shapes, we can conclude that sensory states, whatever other properties they might have, they *do* have presentational content. Of course the relation of a specific sensory state to the relevant state of the environment is no less causal for the fact that some form of information processing is required. The causal link, and the mechanism needed to maintain it is just more complicated.

Note here the interdependence of these notions of basic sensible properties of objects and of the presentational content of sensory states: We can only specify and individuate basic sensible properties of objects in terms of resemblance- and difference-relations between them that we are able sensibly to discern. On the other hand, we can specify the presentational content of sensory states only by reference to basic sensible properties of objects: a sensory state is described and individuated as being e.g. *as of* a green apple. Thus, the individuation both of sensory states and of basic sensible properties are both derived from the same phenomenon – our ability *simply to recognise* resemblance- and difference-relations between objects. It is this that *trivially* secures the correspondence between sensory states and environmental states.

Though these two sets of features – the features of the objects and the presentational features of the sensations – cannot be defined except by mutual reference to each other, they are clearly two distinct sets of properties: a set of properties of sensations, and a corresponding set of properties of objects. Because of the trivial correspondence between these two sets of features, we can legitimately speak of sensations as *representing* the environment and as having presentational content without needing recourse to any claims

about *similarity* between sensations and their objects. Similarity is indeed important in the explanation of the representance of sensations, but the similarity is only asserted as holding between *objects* themselves, not between representations and objects.

It is important to note that Kant uses the term '*Merkmal'* or 'characteristic' to denote a property of *representations:* A characteristic for Kant belongs to the intensional realm, not to the corresponding realm of basic sensible properties of objects. A *characteristic* is a presentational feature of a sensory state, and it corresponds to a *basic sensible property* of objects.

Now we can begin to formulate Kant's theory of the representance of empirical concepts:

Suppose that empirical concepts were somehow able to contain and retain one or more characteristics of sensations. Since each sensation having those characteristics would represent states of the environment having the corresponding sensible properties, it is easy to see that that concept could represent the objects of those sensations by virtue of containing those very characteristics. A concept would then represent an undetermined collection of objects, since it contains a characteristic that can be shared by any number of sensations and by the same token represent any number of objects. The characteristics contained in a particular concept would then be that in virtue of which the concept represents the collection of objects that it does. Kant captures this notion by describing a characteristic as a *ground of cognition:*[86]

> Every concept, as a *partial concept,* is contained *in* the representation of things; as a *ground of cognition,* i.e. *as a characteristic,* it has these things contained *under it.* In the former regard, every concept has an *intension* [content][87]; in the latter, it has an *extension.*[88]

The simplest empirical concept possible would be one that contained only one characteristic, and indeed, characteristics can be viewed as basic, fundamental concepts. This, I think, is what Kant means by saying that partial concepts are contained in the representations of things. Such a single-characteristic concept, and the concept red might be an example, would of course tend to be very general and thus to represent very many things – to have a large extension. An object's having the property of redness would be

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86 This echoes the question of the ground of the relation of representance – i.e. the Key to Metaphysics. See p. 14

87 Translators' insertion

88 Log. §1

the *condition* for having the concept red correctly applied to it. Now, the more characteristics a concept contains, the more conditions an object would have to satisfy in order to fall under the concept, and consequently fewer objects would be likely to satisfy all the conditions, and the concept's extension would tend to be smaller. The *content* of a concept then is the collection of characteristics it consists in, and this is termed its intension. The more characteristics there are in the intension of a concept, the more conditions an object will have to satisfy to fall under a concept, and the smaller the extension will tend to be.

> Intension and extension of a concept have an inverse relation to each other. The more a concept contains under it, the less it contains in it.[89]

The abstractionist view of the representance of concepts

So, this is pretty much Kant's theory of the representance of empirical concepts: Sensations represent objects *directly* in virtue of having characteristics corresponding to basic sensible properties of objects. Concepts have such characteristics as *contents* and represent objects in virtue of these characteristics. This is particularly clear in Kant's Latin definition of concept in the first paragraph of the *Logic*, where a concept is described as a "representation through common characteristics"[90] and "a representation of what is common to several objects".[91] I shall refer to this view as the *abstractionist* view of the representance of empirical concepts.

Now that we have got a fairly clear picture of what Kant's theory of the representance of empirical concepts *is*, we should examine how this theory fares with respect to accomodating the four facts about concepts that I alleged at the beginning of this section[92] and also of how plausible the theory is given other facts about human beings and our world.

The adequacy of the abstractionist view

The first two facts, that concepts have extensions and intensions follow directly from what has been said about characteristics, see above.

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89 Ibid.

90 *"Repraesentatio per notas communes",* Log. §1

91 Log. §1 n.1

92 See p. 46

If a characteristic corresponds to a particular way in which an object can sensibly resemble or differ from other objects, then it follows that an object may be represented by more than one characteristic, since it can sensibly resemble or differ from other objects in more than one way. Since a concept may in principle contain any combination of characteristics, any object will be subsumable under a number of different concepts and non-subsumable under a number of others. As we apply concepts to objects, we have some knowledge of which combination of concepts an object falls under, and some knowledge of which collection of objects fall under a concept, and we thus have knowledge of some relations of the extensions of concepts. If we know that there is an object that falls under both red and round then we know that these two concepts are at least partially co-extensional. So, it looks like the abstractionist view will be able to accommodate our knowledge of extensional relations of concepts.

What then about our knowledge of intensional relations? This too can be readily accommodated. If we assume, as the abstractionist view has it, that the content of a concept is constituted by a set of characteristics; and we further assume that we can at least in some cases come to know what characteristics are contained in a particular concept, then we are in a position in some cases to know whether some concepts *share* characteristics or not, hence to know something of their intensional relations. An example should make this clear. Take the colour *mustard*. I take it that the colour mustard *just is* a dark brownish yellow colour. Knowing that, I know that the simpler concept yellow is contained in the more complex concept mustard coloured, and by knowing *that* I also know that nothing could be mustard coloured and fail to be yellow. By coming to know what characteristics are contained in a concept I can come to know how that concept is intensionally related to other concepts. This is the aim of conceptual analysis as was elaborated in section 2.1.

The plausibility of the abstractionist view

It is all very well to think that if empirical concepts are representations that have as content sensible characteristics, this can explain important facts about our use of concepts; but if we have no idea of how we can come to have such representations, then the explanation remains completely *ad hoc*. Let us see therefore if we can find at least some necessary if not sufficient conditions for the ability to generate and employ such representations and to see whether our having such an ability is credible.

Characteristics are supposed to be ways in which sensations can presentationally differ or resemble each other corresponding to basic sensible properties of objects – or

in other words: what is presentationally common to several sensations, corresponding to what is common to several objects.

Now, if we are to be able to determine and represent what is presentationally common to several sensations, we shall have to be able presentationally to *compare* sensations across times, *abstract* away from what is different and *retain* some representation of what is common. This is roughly Kant's "Logical Acts of Comparison, Reflection and Abstraction" (see p. 51). To do this, it seems that as a minimum requirement we should be able somehow to recall past sensations, to make comparisons between them and to associate them with present sensations. Maybe we also need to be able to imagine future and possible situations in order to complete abstractions away from relevant differences. But all of these are abilities that we know we possess, quite apart from any epistemological considerations about concepts. Upon hearing my sister's voice I can immediately recognise it as such even if she is uttering a sentence I've never heard before; I can associate a fragrance with past fragrances from my childhood and I can imagine sometime in the future once again seeing the rugged landscapes of my homeland and in so doing compare them with my immediate surroundings.

Of course, we are still very far from a complete theory of concepts: What they are, how they are generated and precisely how they are realised as internal states of a person. But our aim was the much more modest one of trying to understand Kant's Key to Metaphysics – what we take as ground of the relation of representance. And in the case of empirical concepts it seems that we are able to understand this; we can tell a story of how concepts come to represent objects. No doubt the story can be refined and extended, but at least it seems that the representance of concepts is no *mystery* – we do not seem to need to make any theoretical assumptions beyond what we either already knew or what is observably the case. The final story of how concepts arise in consciousness might involve some mystery, but their *representance* does not.

The sufficiency of the abstractionist view

Even if the abstractionist view is adequate for an explanation of the four explananda that I noted on p. 46, it is not clear that it is sufficient to explain *all* of our ways of using empirical concepts. I am here thinking of our use of *theoretical terms* and concepts of unobservable entities, such as 'electron', 'electromagnetic field', 'the subconscious' and 'mean kinetic energy'. It is obvious that the content and applicability of these concepts cannot be adequately explained in terms of a collection of sensible characteristics. Nevertheless it is clear that the use of this kind of concept is in some way dependent on

the use of simpler, directly observational concepts. In some way, the use of theoretical terms is derived from our use of sensible and empirical concepts, and the explanation of their representance, will have to be derived from the representance of directly sensible concepts. The investigations into how theoretical terms refer to their objects is a vast and interesting field, but we should not pursue it any further here. Suffice it to say that Kant's distinction between *given* and *made* concepts, where made concepts are those which are explicitly introduced and defined in the course of scientific enquiry, might well prove a valuable insight.

The reality of characteristics and basic sensible properties

Some objections and worries can be raised against Kant's view of concepts as collections of characteristics.

One is to claim that there is no such thing as a *characteristic* in the sense that this term has been defined: *simple* presentational aspects of sensations corresponding to *basic* sensible properties of objects. The objection would be that it is impossible to specify a definite class of predicates that answer to this definition.

A simple predicate would have to be such that it is possible to acquire a competence in applying it independently of knowing how to apply any other predicates. Now, it certainly seems plausible that *some* predicates can be and are learned and subsequently applied in that way. Let us suppose that there is a characteristic corresponding to redness – that the concept 'red' contains just one characteristic. Now, imagine a child learning to use the word "red", which we can take to express the concept red.[93] The child is presented with a number of red objects, and hears the word "red". When it starts uttering the word "red" itself upon being presented with objects, non-red objects are brought in, correct utterances of "red" is rewarded and incorrect ones discouraged. It seems quite reasonable to assume that eventually the child would catch on and start to use the word "red" correctly, hence to have acquired the ability to apply the concept red. A similar story could be told for aspect-variant properties like shapes. Show the child a number of differently shaped objects, reward utterances of "cube" in the presence of cubes, and discourage it in the presence of other shapes. Maybe the acquisition of such concepts of aspect-variant properties requires interaction with the objects beyond mere passive observation, but the essentials would seem to be the same.

[93] In the sense that utterance of the word "red" is taken as an expression of the act of applying the concept red to the presented object.

Disregarding any stories of concept-acquisition, I am observably able *simply* to *recognise* something as red, without considering any other features of it and without having recourse to any sort of analysis or definition of what it is to be red nor to have recourse to any sort of method or procedure for determining something as red. I *simply* recognise it as being red. Similarly for cubes, though I may be less reliable for shape-properties than for colour-properties. Both on the concept-acquisition story and by argument from my ability simply to recognise it would seem that red and cube respectively qualify as a concepts containing just one characteristic and that being red and being cube-shaped are basic sensible properties. The problem is that *which* concepts that can properly be regarded as simple might well vary from person to person or indeed vary over time for one and the same person. Consider: I might well learn to apply the concept purple simply by becoming able to recognise that particular colour. But I might also learn about the colour purple as being a mixture of red and blue, that any object which is both reddish and bluish is purple. So I might start out with using 'purple' as a complex concept and then after a while start using it as a simple one as I gradually acquire a familiarity with it and become able *simply* to recognise purple things as such.

So then, the objection goes, there is no stable, definite class of *simple* concepts, hence there is no such things as characteristics.

This objection fails to appreciate that unlike the notion of a concept, the notion of a characteristic is a *technical* term in epistemology. The notion of a characteristic is in many respect an *idealisation.* Even though there is nothing answering exactly to the definition, the notion may still play an important explanatory role in a theory. This is the case with many theoretical idealisations: there is in reality no such thing as a frictionless plane, a point-mass or an average man, but these notions are still useful in explaining phenomena. All that is really claimed by the theory of characteristics is that we are sensitive to presentational ways in which sensations can vary, and that the representance of concepts is explainable in terms of this.

The second objection is to deny that there are any basic sensible properties. What I present as basic sensible properties are defined in terms of what *we* can sensibly recognise. However, the particular nature of our sensory modalities and our powers of sensory discrimination is surely a contingent matter – different cognitive beings might well have different sensory faculties and hence recognise very different properties of things. Which sensible properties that are regarded as *basic* is thus contingent and merely

relative to human sensibility – there is no ontological distinction between basic and non-basic properties.

This objection relies on an inference from the premise that properties are basic only relative to contingent facts about human sensibility to the conclusion that there are no basic sensible properties. While I accept the premise, I can see no reason to accept the conclusion. The fact that the properties we are able simply to recognise are basic only relative to us, does surely not entail that they are not real properties. The abstractionist view can happily accept the notion of basic sensible properties *relative to human sensibility.*

This also ties in with the third possible objection, which is that the notion of a characteristic might in the end be non-explanatory and resting ultimately on a circular definition. The thought is that we define concepts in terms of characteristics and characteristics in terms of sensible similarity relations. But it seems impossible to find any objective, non-circular definition of similarity relations. Things resemble each other in any number of ways, and it seems always possible to find some spurious similarity among the most diverse of objects. What we are after are the similarities that are relevant to us, and this relevance can only be defined again in terms of the concepts and predicates we actually employ; hence the circle is closed.

There are, I believe, two reasons why this objection fails. Firstly, we are not trying to give a *definition* of the concept of a concept. We are, to repeat, merely trying to explain how concepts can come to stand in relations of representance to objects, and in doing so we are clearly entitled to *use* any concepts already in our possession. Besides, we have seen that the correspondence between characteristics and basic empirical properties is in an important sense *trivial.* It is, and must be, the very same concepts that are used in specifying and individuating both characteristics and basic sensible properties. The individuations of these are inter-dependent, they are really no more than two sides of the same coin. Therefore, there surely is a circularity here, but a virtuous and trivial one – much like the inter-definability of the universal and the existential quantifier.[94]

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[94] Another response to the objection is that to the degree that the circularity could be claimed to be a problem, it is premised on a certain subtle equivocation, which I shall attempt to bring out.

Unless one wants to assert some kind of idealism where we know no objective facts – and that is another discussion entirely – even one who questions the objective reality of the relevant similarity relations would have to agree that these similarities are asserted by warrant of objective facts. Even one who denies the ontological reality of similarities must agree e.g. that given our perhaps vague and imprecise, but nevertheless perfectly meaningful and understandable use of the term 'cold', both the snowball and the refrigerated pint of milk really *are cold.* The similarity-sceptic would rather press the point of why their similarity in terms of an ill-defined range of perceived

c) Perception and particulars

So far, we have developed a Kantian story about how different sensory states can come to represent different environmental states, how general features of the environment can correspond to general features of the sensory states and how concepts can come to represent aspects of the environment in general by being abstracted from kinds of sensations. What we haven't explained so far is how concepts get applied to *particular instances* of the concepts in question. We have not explained how we come to have representations of *particulars*. Arguably our experiencing particulars as such, cannot be cashed out merely in terms of our sensitivity to sensible aspects of the environment or our conceptual ability to represent general features *in general*.

This is a large topic, and some of it will be touched upon in the following chapters, so the present discussion is going to be rather brief, and is intended only to show that some theory of perception as distinguished from mere sensation is needed in order to account for our experiencing the world as containing particulars.

We are able on occasion to cognise, say, a particular horse. How can we explain that: the representance between my particular cognition and the particular horse?

The notion of a particular entails more than there being general and identifiable features of the environment that are represented by the internal states of the subjects. Considerations that are meaningless with regard to mere general features, make perfect sense as regards particulars: For instance, it makes sense of particulars to ask *how many* of them there are on given occasions.

In a vast range of normal circumstances I can ask how many branches there are on a tree, how many apples there are in a basket or how many stars there are in the sky. We might not always be able to answer, but at least these questions *make sense*. But of course, it makes no sense if I for example were to ask you out of the blue "How many are there in England?" Your response would most likely be "How many *what?*" Only relative to some sort of description or classification, some sortal concept, does it make sense to ask "how many?". Now, if all we have are sensory states that passively represent the states of

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temperatures are relevant in a way that say their difference in micro-structure is not? It is thus in a sense the *relevance,* not the *existence* of the objective similarities that is in question.

The answer must be that the relevance of one set of similarities out of the vast set of possible similarities is *constituted* by our propensity to be sensitive to them. All that is needed for communication is that we have similar propensities to be sensitive to certain similarities and not to others. And since communication *is* possible we can take that fact as evidence that we *do* in fact have such similar propensities. Since we are creatures evolved in a specific environment, the assumption that we have some sort of innate relevance-matrix seems defensible on other grounds as well. Quine propounds similar considerations in Quine 1969, pp.114-138.

the environment, then there is nothing to account for our ability to ask, understand and indeed sometimes answer questions about "how many?". For that we need *concepts*, to specify the "*what*" – to say what it is that we are counting. We have already given an account of concepts of course, so that's fine. But concepts are only *general* representations. The concept 'horse' only represents horses *in general* – any and every horse, not *that* one, *over there*, which I am cognising this very minute. How do we get to cognitions of particulars – of *particular instances* of concepts?

Another important fact about particulars is that they can have any number of properties simultaneously; a particular instance of roundness may also be a particular instance of redness, and still be *one and the same* particular. Concepts enable us to represent different universals – *qualitative* difference; but we are also able to represent a mere *numerical* difference. Several particulars might well instantiate the very same universals and yet be numerically different. Kant makes this point in "On the amphiboly of concepts of reflection":

> [I]n the case of two drops of water one can completely abstract from all inner difference (of quality and quantity), and it is enough that they be [perceived][95] in different places at the same time in order for them to be held to be numerically different.[96]

Even if the drops of water should be molecule-for-molecule identical twins, it seems that we would be able to cognise them as distinct. Now, our conceptual faculties, and the representance of concepts in general is not by itself sufficient to explain this. The representance of concepts relates concepts to a *general* class, and two qualitatively identical drops of water would bear exactly the same relation to the concept of a drop of

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95 The original has 'intuited'

96 A263/B319

There are also important metaphysical conclusions to be drawn from this. Kant uses this as an attack on Leibniz' principle of the identity of indiscernibles. The two drops of water share all properties and are hence indiscernible in Leibniz' terms, and yet in virtue of being in different locations at the same time, they are clearly distinct. An obvious way of countering this attack is to say that spatial location is just another property, hence the two drops of water are discernible in the right sense after all. There are two problems with this: One is the problem of incongruent counterparts, which I shall not go into here, the other is that on this view the distinction between universal and particular – between a general concept and its instances seems to break down. If spatial location is part of what specifies the nature of, say, a *general* feature of the environment – how can we make sense of the notion that the *very same feature* can be encountered at many different places? How can we distinguish between a general kind and its instances?

This, however, is beyond the scope of the present concern, which is not metaphysical, but epistemological: We represent, think of, cognise, things as particular instances of universals. What are the necessary subjective conditions for doing so?

water. Nevertheless we are able to represent them as different. Conceptual abilities can explain our representing particulars as instances of specific universals, but not as distinct instances of the same universal, i.e. numerically different even if qualitatively identical. Sensations, however, stand in immediate *causal* relations to their objects, so two distinct perceived drops of water, could well give rise to two distinct sensory states, by being presented as distinctly spatially located. On the other hand, while sensibility can explain our representing particulars as numerically different, it cannot explain how we represent particulars as instances of specific universals since *that* entails synchronic and diachronic relations *between* sensations.

Both sensation and conceptual faculties are clearly essential aspects of how we represent particulars, so it would be natural to assume that that an account of our ability to cognise particulars would have to make reference both to sensibility and to conceptual faculties. And I shall claim that what we call *perception* involves precisely such references both to sensibility and conceptual abilities. By 'perception' I mean such occurrences as seeing a horse, hearing the word 'table', smelling the smell of coffee and so on, and *thereby being able to describe the occurrence in those terms.* The point is that when I perceive a horse, I'm not merely passively having a sensory state corresponding in various ways to the presence of an actual horse – I am also perceiving it *as a horse*. And the same holds *mutatis mutandis* for the other examples. With perception comes also the possibility of *misperception.* I might find myself momentarily startled by what I take to be a large, hairy spider on the kitchen floor until I realise that it was nothing but a wayward bunch of loose straw – evidently being misperceived as a spider. We may suppose that nothing about my sensory state have changed between my reacting with fear to what I thought was a spider and my subsequent relieved realisation that it was nothing but a bunch of straw. Yet *something* changed, and it would seem that a reasonable explanation is that a different concept was applied to the sensed environmental state.

I shall not pursue these considerations further here. It is a vast topic. For the present purposes it suffices to note that we *are* able immediately to apply concepts to sensible particulars, as evidenced in the example of the straw/spider and I take it that this happens in perception. This offers us a way of explaining cognition of particular objects. The conceptual faculties give us ways of representing the universals of which the particulars are instances and sensibility gives us the immediate link to the *particular* instances.

"Weighty" properties of objects

It is clear that our cognitive abilities go further still than what has been sketched so far. In addition to general features and particular instances of concepts, we are also able to cognise much more "weighty" properties of objects. Objects are not only identifiable and countable – properties the cognition of which we can explain by reference to concepts being abstracted from sensations – they are also *re-identifiable;* they have *essential* and *contingent* properties, they *persist* through time and they can survive changes. Our ability simply to recognise basic sensible properties is not sufficient to explain our cognition of these properties. This again, is just the problem of the representance of the pure concepts. We shall see later, that it is precisely in order to explain these and related features of our epistemic abilities that we need to rely on Kant's analysis of Pure Concepts and Principles.

d) Abstractionism and current debate

These topics, which I have referred to as the question of "the ground of representance" remain hotly debated in current research in philosophy, linguistics and cognitive science. In the above passages I have tried merely to bring out what seems to be Kant's underlying view on these matters – I am not in a position to hold an opinion of the extent to which this view will pass muster in light of current findings.[97] It may well be that the abstractionist view needs to be modified, revised or even ultimately rejected. Be that as it may, it is of no great consequence to Kant's main concern, which after all is to explain the representance of *pure* representations, not of empirical ones. What is needed from the discussion of empirical representations is the truth of two premises:

1) Empirical concepts represent sensible objects
2) There are some knowable intensional relations between concepts

To deny the first of these premises one would have to claim that in general our empirical concepts have no valid application to objects, while to deny the second would be to say that all the relations between a particular concept and its extension are *primitive* – there is no knowable systematicity to the way a concept relates to its extension. Neither claim

[97] It seems to me that some eminent, more recent papers on the problem of psychosemantics discuss mental representations in general as if they were all concepts and as if *one* unified theory of "mental referring" could be given for all mental representations. One might be forgiven for thinking that Kant's insistence on fundamental distinctions to be drawn between different kinds of representance for different kinds of representations is an insight that might well have considerable advantages even in the current debate. (See e.g. Fodor 1980, 1990a, 1990b and Millikan 1993)

seems particularly plausible, no matter what the correct theory of mental referring might turn out to be.

What is important to Kant's arguments about the representance of pure representations is the *truth* of these two premises, not their justification. He may well have been wrong in his (largely implicit) explanation of *why* these two premises hold, but that does not entail that they don't.

3.4 Pure representations

Having brought out how the ground of the representance of empirical representations is supposed to be readily explainable and uncontroversial, we can now begin to turn to the proper topic of the *Critique of Pure Reason*, namely *pure* representations – pure concepts and principles. These were the *foci* of Kant's interest. His seminal insight, the expression of which in the letter to Marcus Herz I have repeatedly quoted, was that in order to make any progress in metaphysics we need to explain or determine how pure concepts may be related to their objects. And the important point is that the concepts central to metaphysics, such as 'self, 'substance' and 'cause – effect' are not amenable to the same kind of representance theory as the empirical concepts were.

By definition, metaphysical concepts purport to go beyond experience – they are, in important ways, non-sensible. In the case of empirical concepts, their representance could be explained by their being abstracted from sensible experience. If the validity – i.e. the actual applicability – of an empirical concept is questioned, all that is needed to validate the concept is to produce or point out some instances of it. An empirical concept "carves" the world up in parts that either do or don't fall under the concept, and its validity can always be demonstrated by examples. Kant makes this point in the introduction to the Transcendental Deduction, where the validity of *pure* concepts is at issue:

> We make use of a multitude of empirical concepts without objection from anyone, and take ourselves to be justified in granting them a sense and a supposed signification even without any deduction, because we always have experience ready at hand to prove their objective reality.[98]

Demonstrating the validity of an empirical concept should in Kantian terms be called an *Empirical Deduction*, "which shows how a concept is acquired through experience and

[98] A84/B116

reflection on it…"[99] But this is not available for pure concepts. We do not divide the sensible objects in the world into those that are substances and those that are not. Similarly nothing is a cause or an effect *simpliciter*. Rather, *every* event is both a cause and an effect – effect of prior events and cause of posterior events. Thus it will not be possible to validate the concept of cause and effect by as it were running through a series of events and saying *this* event is a cause, *that's* an effect and *this* event is neither cause nor effect. And this is not just because the notion of cause and effect is fundamentally relational, such that we need both *relata* in order to identify and instance of causality, for there is nothing sensible in virtue of which events related as cause to effect are to be distinguished from events not so related.

> To seek an empirical deduction of [the categories] would be entirely futile work, for what is distinctive in their nature is precisely that they are related to their objects without having borrowed anything from experience for their representation.[100]

Perhaps the most famous and certainly the most relevant statement of the claim that the notion of causality cannot be derived from experience, is Hume's dissection of the notion of causality in *A Treatise of Human Nature*.

> Let us therefore cast our eye on any two objects, which we call cause and effect, and turn them on all sides, in order to find that impression, which produces an idea of such a prodigious consequence. At first sight I perceive, that I must not search for it in any of the particular *qualities* of the objects; since which-ever of these qualities I pitch on, I find some object, that is not possest of it, and yet falls under the denomination of cause or effect. And indeed there is nothing existent … which is not to be consider'd either as a cause or an effect; tho' 'tis plain there is no one quality, which universally belongs to all beings, and gives them a title to that denomination.[101]

The main point of this seems to be that there is no perceptible criterion by which to separate causes from non-causes; effects from non-effects. Causality, then, should be regarded as a certain complex *relation.* Hume then goes on to analyse this relation and finds that it has three components: "*contiguity*", "*priority* of time in the cause before the effect", and the most important one: "*necessary connexion*"[102] (We could say that the

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99 A85/B117

100 A85-86/B118

101 Hume, *THN* p.122–123

102 Op. cit. p. 123–25

relational concept of causation contains three relational characteristics). Hume accepts that contiguity and temporal priority is sensible – perceptible – and hence straightforwardly derivable from experience. The problem lies with the idea of a *necessary connection*. Hume held that all ideas must be derived from impressions – roughly perceptual representations – and his contention is that no impression could adequately ground the idea of a necessary connection. Instead he claims that we are habituated to associate a sequence of events with previously observed sequences *resembling* it.

> The several instances or resembling conjunctions lead us into the notion of power and necessity. These instances are in themselves totally distinct from each other, and have no union but in the mind, which observes them, and collects their ideas. Necessity, then, is the effect of this observation, and *is nothing but an internal impression of the mind…*[103]
> Either we have no idea of necessity, or necessity is *nothing but that determination of the thought to pass from causes to effects and from effects to causes*, according to their experience'd union.[104]

So there is no necessity in reality – necessity is not real. And since necessity is an essential characteristic of causality, causality is not real. In Kantian terms, the Humean epistemological project has failed to provide a proper grounding for the relation of the concept of causality and its purported objects. Hence the question of this grounding is the Key to Metaphysics.

Now, Kant accepted Hume's arguments to the effect that the notion of causality is not derived from experience

> …no one would say that the category, e.g., causality, could … be intuited through the senses and is contained in the appearance…[105]

but he certainly did not accept that it should therefore be "committed to the flames".[106] Indeed Kant puts his own nice little twist to Hume's pyro-imagery in the preface to the *Prolegomena:*

> …nothing has ever happened which could have been more decisive to [metaphysics'] fate than the attack made upon it by David Hume. He threw no light on this kind of knowledge; but he certainly struck a spark from which light might have been obtained, had it caught

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103 Op. cit. p. 215 *(My italics)*

104 Op. cit. p. 216 *(My italics)*

105 A137–38/B176–77

106 See p. 10

> some inflammable substance and had its smouldering fire been carefully nursed and developed.[107]

So, Kant's task, and ours, is to show that even if not derived from experience, the notion of causality and the other pure concepts can have a valid relation of representance to their objects whilst yet being independent of experience; thus to steer clear of the accusation of "sophistry and illusion".

My proposal for solving this task – my interpretation of Kant's *Critique* is that pure concepts are *second-order* concepts. They apply to objects only *mediately*, by means of reference to formal aspects of human cognition.

[107] *Proleg.* p. 257

Chapter 4 – The formal analysis of empirical knowledge

Before we tackle Kant's analysis of the form of empirical knowledge, it will again be appropriate to clarify some terminological issues. Though Kant makes frequent reference to empirical *representations,* i.e. empirical concepts, empirical intuitions and empirical judgements, he rarely refers explicitly to empirical *knowledge.* Instead he refers frequently and consistently to *experience.* Now, 'experience' in English translates two different terms in German whose meanings are clearly distinct, namely *'Erlebnis'* and *'Erfahrung'*. *Erlebnis* is that kind of experience you can only have by personally "living through" that experience. You can only have *Erlebnis* of a broken heart by actually having one, or else having extraordinary powers of imagination and empathy. *'Erlebnis'* could fairly appropriately be translated as 'subjective experience'. Current interest in subjective experience often include a focus on "phenomenal character" and "'qualia".

'Erfahrung' on the other hand, whilst overlapping in meaning with *'Erlebnis',* could also be used to signify that kind of experience which can be exhaustively communicated by words. We could call this 'expressible experience'. Significantly, Kant exclusively and consistently uses *'Erfahrung',* never *'Erlebnis'*. In my opinion, Kant is not at all concerned with any mere subjective aspects of experience. Since Kant also holds that experience is a product of understanding[108] and that understanding consists of making judgements,[109] it would seem evident that the kind of experience that Kant intends is expressible experience – which in my opinion, at least for the purposes of this thesis, could equally well simply be called 'empirical knowledge'. As this term is free of the ambiguity of 'experience' I have used it when giving my own arguments and shall continue to do so. When commenting on Kant's text it will sometimes be more helpful to

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108 A1

109 *Proleg.* p. 323:

> I looked about for an act of the understanding which comprises all the rest and is differentiated only by various modifications or moments … I found this act of the understanding to consist in judging.

A69/B94:

> We can … trace all actions of the understanding back to judgments, so that the **understanding** in general can be represented as a **faculty for judging.**

use 'experience' – this should do little harm as long as it is kept in mind that in these cases we are never concerned with subjective experience.[110]

4.1 Empirical knowledge consists of judgements

It is a tacit assumption throughout Kant's transcendental philosophy that empirical knowledge consists of, or at least is expressible in, judgements.[111] The idea is essentially that all experience is propositional – experience for Kant is experience *that… (Erfahrung daß…)* As far as I can see, this assumption seems sensible enough, but there is little or no argument for it. It might be that this assumption could be challenged and that there might be non-judgemental elements of empirical knowledge. I cannot envisage what such elements could be: Anything expressible and at all empirically significant, would be expressible as some kind of judgement, I take it; so non-judgemental empirical knowledge would not be expressible, hence not specifiable. So clearly any such elements would in practise be impossible to discuss. Anyway, it makes little difference whether there in fact be such elements. All that is needed for the critical arguments is the *existence* of judgmental empirical knowledge. The arguments then proceed by showing that there are necessary conditions for the existence of certain forms of judgmental empirical knowledge, and that these conditions give rise to certain principles that are universally valid throughout judgmental empirical knowledge. Whatever might be the case with any possible non-judgemental empirical knowledge may be kept open. At worst the conclusions drawn would be incomplete, but not false. It is surely an observable fact that we do have empirical knowledge which is expressible in judgements, and we shall let *that* knowledge be the object of our studies.

Note that this is not to claim that all of our cognitive relations to objects consist in judgements. In addition to our *knowledge* of objects through empirical judgements as instantiated in my knowing, say that a particular apple is ripe; we also have a more immediate cognition of objects in *perception*, as in correctly seeing an object as a horse. Whether mere perception should be classified as a kind of knowledge or not is largely a

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110 It is difficult not to note that a failure to be sensitive to these terminological issues could be blamed for a considerable degree of unnecessary complications in anglophone post-Kantian philosophy. An example is John McDowell in *Mind and World,* who professes to be exploiting Kantian terminology, (McDowell 1994, p. 41) but then consistently uses the term 'experience' for "what Kant calls 'intuition'". (p. 9) When McDowell then uses expressions like 'judgements of experience' which becomes homophonic with Kantian expressions with a completely different meaning, his exploitation of Kantian terminology moves towards abuse and away from mere employment.

111 This assumption is needed to render valid inferences which have as premises the existence of experience and conditions for the possibility of making judgements, which would otherwise strictly be *non sequiturs.*

terminological issue. In a Kantian context the term 'knowledge' should be reserved for cognitions that have a certain structural complexity corresponding to forms of judgement. This will be discussed more fully in the following sections.

a) Judgements and intuition – the simple view

Now we are finally in a position to start examining Kant's Analytic Premise, (see p.21), the formal analysis of human judgements. The first issue should be Kant's conception of judgement in general, before we go on to investigate his account of the various forms of judgements. To get clear about Kant's conception of judgement we need to examine carefully the relation and distinction between judgement and intuition, as the way this distinction is presented in the *Critique* is frequently quite confusing, and has in my opinion led several highly competent commentators into unfruitful lines of investigation.

I have argued that in order to explain our ability to cognise particular objects we needed to assume a faculty of perception which had to involve both sensibility and conceptual abilities. I shall argue below (in section 4.1c) that such a faculty is needed also to explain our ability to make empirical judgements and that this is the most plausible and fruitful understanding of Kant's notion of *intuition.*[112]

In order to uncover Kant's conception of judgement in general, we need to unravel quite a number of related terms. First, we should note two fundamental dichotomies that Kant makes: One between sensibility and understanding and one between intuitions and concepts.

> [T]here are two stems of human cognition … namely **sensibility** and **understanding,** through the first of which objects are given to us, but through the second of which they are thought.[113]
>
> Intuition and concepts therefore constitute the elements of all our cognition, so that neither concepts without intuition corresponding to them in some way nor intuition without concepts can yield a cognition.[114]
>
> All cognitions, that is, all representations consciously referred to an object, are either *intuitions* or *concepts.* Intuition is a *singular* representation *(repraesentatio singularis),*

[112] With the caveat that "pure intuitions" might not fit into this picture. But in my opinion, it is unclear how to make sense of this notion anyway, and the notion of pure intuition will not figure in the arguments to be given below.

[113] A15/B29

[114] A50/B74

> the concept is a *general (repraesentatio per notas communes)* or *reflected* representation *(repraesentatio discursiva).*
> Cognition through concepts is called thinking *(cognitio discursiva).*
>
> **Note 1.** Concept is opposed to intuition, for it is a general representation or a representation of what is common to several objects, a representation, therefore, *so far as it may be contained in different objects.*[115]

Further it seems that *thinking*, *understanding* and *judging* all come to the same thing:

> [T]he cognition of every … understanding is a cognition through concepts.[116]
> Cognition through concepts is called thinking.[117]
> [T]he understanding can make no other use of … concepts than that of judging by means of them.[118]

These and similar passages seem to suggest a fairly clean and simple view. In terms of faculties, we draw a distinction between the active faculty of understanding, and the passive faculty of sensibility. This same distinction can be drawn at the level of the "products" – the representations – of both faculties, namely between concepts and intuitions. Concepts and intuitions form irreducible components of knowledge, the co-operation of the two faculties in *judgings* results in combinations of concepts and intuitions which constitute *cognitions* or *knowledge.* This also affords a very simple view of judgement: It is any application of a concept or concepts to objects of intuition. And since this is the only thing to which concepts can be applied, judgement *just is* the application of concepts.

W.H. Walsh clearly holds this view, as is evidenced in passing when he discusses Kant's Transcendental Deduction:

> That judgment requires not merely the application of concepts **(which is what it essentially is),** but of concepts formed on the basis of *a priori* rules…[119]

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115 Log. §1

116 A68/B93

117 Log. §1

118 A68/B93

119 Walsh 1975, p. 49 – my emphasis

Strawson holds essentially the same view about judgements:

> What is now to engage our attention is what is involved in the recognition of objects as falling under *concepts,* the "bringing of them under concepts". This is identical with making *judgements* about objects. "The only use which the understanding can make … of concepts is to judge by means of them." (A68/B93) To bring an object under a concept involves thinking that a certain proposition is true of the object or is objectively valid. Empirical knowledge, like all knowledge, is essentially expressible in propositions.[120]

b) Problems with the simple view

This simple view faces several difficulties, some of which are commonly noted and dealt with by commentators, while others seem to be largely overlooked.

The conceptual element of intuitions

The fairly obvious problem lies with the claim that while intuitions on this view are purely sensible they are yet said to represent *objects.* W.H. Walsh gives a succinct account of this difficulty:

> The process of intuiting, for Kant, is the process by which we become aware of particulars; the process of thought that by which we 'think' and so comprehend such particulars under a certain description.[121]
>
> The difficulty here concerns the suggestion that intuition results in the grasping of an *object,* for if it does, it would seem to be not just a component in knowledge, but a form of knowledge on its own.[122]
>
> What then is the status of the contents of sensation? I have myself spoken of them as 'particulars' but the term 'particular is itself a correlate of 'universal': a particular is an instance of a universal. According to the theory stated above, intuitions need to be brought under concepts in order to be comprehended; if they are particulars they already stand under concepts. The only way I can see out of this difficulty is to say that sensation is not strictly a form of awareness, since it has no true objects, but a mode of experience which is *sui generis;* without it experience of particulars would be impossible, though it is false to describe it as presenting particulars for description. Sensory content – 'intuitions', as Kant calls them – are not objects of any sort, public or private.[123]

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120 Strawson 1973, p. 74

121 Walsh 1975, p. 12

122 Op. cit. p. 13

123 Op. cit. p. 14–15

> [Intuition] can be described as awareness of particulars only proleptically…[124]

Henry Allison, in his *Kant's Transcendental Idealism,* endorses Walsh' diagnosis of the problem and his resolution of it:

> [A] tension, if not outright contradiction, has often been noted between the official definition of 'intuition' as a "singular representation" and the account of sensible intuition. The problem is that, according to Kant's theory of sensibility, sensible intuition provides the mind with only the raw data for conceptualization, not with the determinate knowledge of objects. Such knowledge requires not only that the data be given in intuition, but also that it be taken under some general description or "recognized in a concept." Only then can we speak of the "representation of an object". Kant gives clear expression to this central tenet of his epistemology in the famous formula, "[Intuition and concepts therefore constitute the elements of all our cognition, so that neither concepts without intuition corresponding to them in some way nor intuition without concepts can yield a cognition.]" (A50/B74)[125]
>
> The key to the resolution of this tension is well expressed by W. H. Walsh, who remarks that a Kantian sensible intuition is only "proleptically" the awareness of a particular. The point here is simply that, although intuitions do not in fact represent or refer to objects apart from being "brought under concepts" in a judgement, they *can* be brought under concepts, and when they are they *do* represent particular objects[126].

While these commentators are indisputably right in pointing out a tension in the simple view of intuitions and concepts, it seems to me that their resolution to the problem creates a number of new problems. One is that on their view there is no intrinsic difference between sensations and intuitions. The only difference is that for intuitions there are concepts under which they can be subsumed, but for (mere) sensations there are no such concepts. On this model it seems strange that Kant should need a separate technical term for intuitions. He already has terms for sensations and sensibility[127] *and* 'cognition' to cover the combination of sensation and concept into an objective representation. If this was all there was to the notion of intuition, it would seem much more natural for Kant to talk about pure *sensation* than of pure intuition.[128] But he doesn't. Another major

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124 Op. cit. p.15

125 Allison quotes Kemp Smith's translation which has 'knowledge' rather than 'cognition'. I have inserted the translation from the Cambridge edition.

126 Allison, p. 67–8

127 viz. *Empfindung* and *Sinnlichkeit*

128 Interestingly, Wilfrid Sellars, who does not hold the simple view of intuitions, but thinks that the notion of intuition as it is primarily used by Kant entails a conceptual element, accuses Kant of overlooking the need for structuring of experience by "sheer receptivity". (Sellars 1968 p.16, 29)

problem is that Kant is quite explicit about intuitions being full-blown, rather than just "proleptic" representations of objects. He even *defines* intuition as one species of cognition, a cognition that is *immediately related to its object*, thus in the *Logic*:

> All cognitions, that is, all representations consciously referred to an object, are either *intuitions* or *concepts.* Intuition is a *singular* representation *(repraesentatio singularis),* the concept is a *general (repraesentatio per notas communes)* or *reflected* representation *(repraesentatio discursiva).*[129]

And in the Critique, empirical intuition is defined as "that intuition which is related to the object through sensation".[130]

Claiming that intuition is related to the object *through* sensation clearly suggests that intuition is something *over and above* mere sensation, not just a sub-class of sensations that happen to be subsumable under concepts. Note that intuitions are supposed to be related to objects through *sensation (Empfindung),* not through mere *sensibility (Sinnlichkeit).* Sensation, moreover, is classified as a purely passive faculty – a purely causal phenomenon:

> The effect of an object on the capacity for representation, insofar as we are affected by it, is **sensation.**[131]

Guyer & Wood also avert to a very interesting note that is added in Kant's own copy of the *Critique:*

> Intuition is related to the object, sensation merely to the subject.[132]

From this it seems indisputable to me that Kant held a) that intuitions fully represent objects – concrete particulars, and b) that they do so in virtue of something over and above mere sensation. The obvious candidate for that component in virtue of which intuitions can fully represent objects is *concepts.* And in a Kantian context this is certainly the case, as he is explicit in claiming that concepts are needed even for the bare representation of a particular: In the first edition of the Transcendental Deduction he states that "All cognition requires a concept, however imperfect or obscure it may

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129 Log. §1

130 A20/B34

131 Ibid.

132 *Critique of Pure Reason,* Cambridge ed. 1998, p. 155 note d.

be…".[133] Intuition is one of the two species of cognition; the other is concept itself, and it would hardly be illuminating to be told that concepts require concepts, so the point of the remark must be that even intuitions require concepts. Now, concepts are by definition the work of understanding, so if intuitions have a conceptual constitutive component, we can make good sense of a remark Kant makes in his "Clue to the Discovery of all Pure Concepts of the Understanding**".**

> The same function that gives unity to the different representations **in a judgment** also gives unity to the mere synthesis of different representations **in an intuition,** which, expressed generally, is called the pure concept of understanding. The same understanding, therefore, and indeed by means of the very same actions through which it brings the logical form of a judgment into concepts by means of the analytical unity, also brings a transcendental content into its representations by means of the synthetic unity of the manifold of intuition in general…[134]

This passage has the characteristic denseness of much of Kant's writing, but the main point here is that the same function of understanding can be found in an intuition as in a judgement; which makes perfect sense if both involve essentially the application of concepts.

On this revised view where intuitions involve both sensibility and conceptual abilities, the dichotomies of understanding vs. sensibility and concepts vs. intuition do not run along the same fault lines. This means that the dichotomy between concepts and intuitions is more complicated than that between sensibility and understanding, so I shall return to discuss this, and to develop further this dual-faculty view of intuitions. But before that, I want to focus on another problem.

Although none of the commentators seem to have been alert to this, the simple view of judgement that is a corollary of the simple view of intuition is fundamentally irreconcilable to the view of judgement that is implicitly necessary in order to make sense of Kant's inferences from the forms of judgements. On the simple view *any* application of a single concept counts as a judgement, whereas Kant's table of forms of judgements invariably requires a judgement to consist in a combination of at least *two* concepts.

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133 A105

134 A79/B104–5, my underscoring

The complex nature of judgement

As mentioned above, the simple view of intuition and judgement has it that *any* application of a concept or concepts amounts to a judgement. This would entail that the mere recognition of something as being of a certain kind – as falling under some specific concept – has to count as a judgement. My mere recognition of a horse as such, is an instance of judging – a judgement. Of course, initially this makes sense, since it is also assumed that an intuition is purely sensible and has no conceptual component. It is only "proleptically the representation of a particular". By being subsumed under a concept, the intuition finally becomes a full-blown cognition and the act of subsumption amounts to a judgement. This also seems to make sense of the dichotomy between intuitions and concepts – they are jointly necessary, mutually irreducible components in judgements.

The problem with this view is that it allows of judgements that involve no more than one concept. Simply recognising a horse *as* a horse, is a perfect example of a judgement – maybe even a paradigmatic one. However, as we shall see, for Kant any and every judgement has to involve at least two different concepts; a claim for which I believe there is conclusive textual evidence:

In every single example Kant gives of a judgement, either in the *Critique* or in the *Logic*, at least two concepts are involved: minimally a subject concept and a predicate concept. The very possibility of distinguishing between a subject and a predicate clearly requires the presence of a corresponding number of concepts. In one of his *Reflexionen*, (R4634) Kant states that a judgement consists in the comparison of two *predicates*:

> Every judgment, therefore, contains two predicates which we compare with one another. One of these which constitutes the given knowledge of the object, is called the logical subject; the other, which is compared with it, is called the predicate.[135]

Also Kant's definition of analytic and synthetic judgements indisputably entails that a judgement must contain at least two concepts. The analyticity or syntheticity of a judgement is defined in terms of the intensional relations between the subject concept and the predicate concept: Analytic judgements are those where the predicate concept is "contained in" the subject concept; synthetic judgements those where it isn't.[136] Now, since synthetic judgements are defined only negatively as not being analytic, the

[135] XVII 616–17, Quoted from Allison 1983, p. 71

[136] See e.g. A6–7/B10–11

analytic/synthetic distinction is clearly a dichotomy, so that these two alternatives are mutually exclusive. If they are also jointly exhaustive, then it follows that *any* judgement must involve at least two concepts. Now, Kant is not completely explicit on this point. Just prior to defining the analytic/synthetic distinction, Kant says:

> In all judgments in which the relation of a subject to the predicate is thought … this relation is possible in two different ways.[137]

This leaves it open whether there might also be judgements in which the relation of a subject to a predicate is *not* thought, so that these might possibly for instance have only a subject concept. This need not concern us here however, as Kant goes on to say that "Judgements of experience, as such, are all synthetic".[138] Synthetic judgements are synthetic in virtue of the relation of the subject concept to the predicate concepts, hence judgements of experience must contain at least two concepts. And the object of our enquiry is precisely judgements of experience and any conditions for making such judgements. And *these* must by definition involve at least two concepts.

This is of course not to deny that there may be – indeed are – cognitive episodes in which a single concept is applied to an empirical object; but these episodes are not classified as *judgements* in Kantian terms. We shall look closer at the justification for this taxonomy in the next section.

c) A fuller view of judgements and intuition

I have argued that in order to make sense of Kant's terminology we should regard intuitions as having a conceptual element and judgements as always involving at least two different concepts. In this section I shall develop this view in some more detail and also try to give philosophical and epistemological arguments for holding this view.

Dual-Faculty intuitions

The view of intuitions that I advocate is one that is instructively worked out by John McDowell in his article "Having the world in view: Sellars, Kant, and Intentionality" where he comments on Wilfrid Sellars' understanding of some fundamental Kantian notions. I shall refer to this view as "the Dual-Faculty View of intuitions".

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137 A6/B10

138 A7/B11

Given the Dual-Faculty View, and the definition of intuition as being *immediately* related to its object,[139] then if we are able to intuit, we should assume that we have a capacity for *immediately*[140] apprehending objects as such – as particulars falling under concepts. There would be little point in elaborating a precise definition of some cognitive capacity and drawing conclusions therefrom if in fact we do not possess such a capacity.

But this capacity, I claim, is precisely what we display in perception. When being presented with a big, hairy spider on the kitchen floor, I immediately and inevitably perceive it *as such.* On seeing the "Exit" sign, I cannot but see it precisely as that, and when someone shouts 'Duck!' in a sufficiently urgent tone of voice I cannot help putting my head down. This immediate response to a sensibly apprehended object, I suggest, can only reasonably be explained by my immediately and automatically having somehow *understood*, having already conceptualised it. I immediately subsume the object under some concept.

Nevertheless, there are important differences between this and *judging*, between perception and the proper exercise of judgement.

We should note that on the Dual-Faculty View, intuiting bridges the gap between the free exercise of conceptual powers in judging and the passive affective state of mere sensing; and hence, whilst having elements of both, is significantly different from either.

McDowell gives a good account of the element of Kantian responsible freedom in the very notion of *judging:*

> [J]udging, making up our minds what to think, is something for which we are, in principle, responsible – something we freely do, as opposed to something that merely happens in our lives. Of course, a belief is not always, or even typically, a result of our exercising this freedom to decide what to think. But even when a belief is not freely adopted, it is an actualization of capacities of a kind, the conceptual, whose paradigmatic mode of actualization is the exercise of freedom that judging is. This freedom, exemplified in responsible acts of judging, is essentially a matter of being answerable to criticism in light of rationally relevant considerations.[141]

This is evidently the case; in showing poor judgement we are appropriately liable to rational criticism, and we can be blamed for not having shown good judgement. Not so

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139 See e.g. A68/B93

140 Note that 'immediate' here does not entail 'instantaneous'. My perception of the sun is no less immediate for the fact that its light take some eight minutes to reach me. The idea is rather that the apprehension is not mediated by any conscious act of deliberation, evaluation etc.

141 McDowell 1998, p. 434

in the case of mere perception. I cannot help but see the spider as such – taking it to be a spider. That, of course is not to say that I cannot *mis*-take it; as in the case where I take a bundle of straw to be a spider. But in either case there is initially nothing I can do about it, I just happen to see it as a spider, or not as the case may be. Of course, I can subsequently come to form a judgement of whether my initial perception was correct or not, and *that* judgement will be liable to rational criticism, but in perceiving – intuiting – I have no choice.

Again, McDowell expresses this fact well:

> [P]erceptual belief acquisition is not a matter of judging, of actively exercising control over one's cognitive life, at all. Unless there are grounds for suspicion, such as odd lighting conditions, having it look to one as if things are a certain way – ostensibly seeing things to be that way – becomes accepting that things are that way by a sort of default, involving no exercise of the freedom that figures in a Kantian conception of judgement.[142]

> It does not take cognitive work for objects to come into view for us. Mere synthesis just happens; it is not our doing, unlike making judgements.[143]

But these essential differences between freely judging and happening to perceive do not preclude us from taking the very same conceptual capacities to be actualised in both cases:

> [C]onceptual capacities are essentially exercisable in judging. [But] judging is not the only mode of actualization of conceptual capacities.[144]

McDowell further discusses a claim of Sellars' that visual experiences "make" or "contain" claims in virtue of being conceptual episodes. This is basically just the claim that intuitions have a conceptual element. We can understand the conceptual contents of a perceiving by analogy roughly with how that perceiving would be reported verbally. While the actualisation of the conceptual capacities is involuntary in the case of perceiving, we can still understand it as involving exactly *the same* conceptual capacities that are paradigmatically exercised in free responsible judgings.[145]

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142 Op. cit. p. 439

143 Op. cit. p. 462

144 Op. cit. p. 434

145 See Op. cit. p. 439–41

> They would differ only in the way in which the relevant conceptual capacities are actualized. In the judgment, there would be a free responsible exercise of the conceptual capacities; in the ostensible seeing [putative or real perception], they would be involuntarily drawn into operation under ostensible necessitation from an ostensibly seen object.[146]

On this view, intuitions are like sensations in that they are *involuntary* – not up to us. Nevertheless they share the conceptual element with the active faculty of understanding. I may have no choice about seeing the spider as a spider, but nevertheless it is not conclusively determined by the world. Had my psychological, cultural or epistemic history been different I might well not have seen the spider as a spider at all, but maybe just as some animal. It is even possible, I suppose, that I could have perceived it (perish the thought) simply as food.

This is precisely the point of the Dual-Faculty view of intuition, that it has characteristics both of the spontaneity of understanding and the passivity of sensibility.

> In an intuition on this interpretation of the term, sensibility and understanding are both involved.[147]

Note that this Dual-Faculty view of intuitions dispels what could otherwise easily be seen as a mystery, namely how the results of an essentially passive and affective sensibility can stand in inferential relations with conceptually expressible beliefs, i.e. how beliefs can be justified by sensation.

Bi-conceptual judgements

I have argued that any judgement in Kantian terms must involve at least two concepts – a subject concept and a predicate concept. The most basic and simple form of an empirical judgement would be to attribute some property to some identified object, such as to judge of a perceived horse that it is white.

To make basic empirical judgements one must thus be able to identify objects and to attribute further properties to such identified objects. If an empirical judgement is true at all, it is true *of an object*. So the making of a judgement requires the prior identification of an object. On the other hand the identification of an object does not require the making of a judgement involving two distinct concepts. I may well perceive a horse as

146 Op. cit. p. 458

147 Op. cit. p. 452

such – recognise a horse – and even give verbal expression to it, maybe by exclaiming something like 'Wow, a horse!' without in any sense employing distinct subject and predicate concepts.

This is just as we should expect, of course, for if the identification of an object itself required the making of a judgement, we would obviously not be able to make any judgements at all, because the conditions for doing so would involve an infinite regress. Therefore, one condition for the possibility of making basic empirical judgements *must* be that we are able to identify objects without making judgements.

Now, we should stop briefly at this point to examine a possible objection to my account of the simple recognition of the horse as such, which I claimed could be expressed by 'Wow, a horse'. It could be claimed that the right way of analysing such an occurrence should be something like 'that four-legged largish figure is a horse', or perhaps just 'that thing over there is a horse'. The claim would be that the ordinary empirical concepts such as 'horse' entail a complexity far beyond what we directly perceive, e.g. that horses are persisting objects, that they have more sides and aspects than what is visually presented, that they form a natural kind standing in complicated causal relations and so on; so the concept under which we immediately subsume the object in perception, certainly cannot be the concept *'horse'*. Instead we have to assume that we recognise objects as falling under simpler perceptual "proto-concepts" such as 'four-legged largish figure' or 'thing'. Whether this objection is true or not, it is largely irrelevant to my claim. If the event reported by me as 'Wow, a horse' must be analysed as applying the full-blown concept 'horse' to an object immediately recognised as falling under some proto-concept, this does nothing to disprove the claim that the ability to judge presupposes an ability to immediately recognise objects as falling under concepts; it can only show that the concepts under which objects are immediately recognised are simpler than the concepts normally applied as predicates in judgements. That said, I am not persuaded that even this much is really established by the objection. It may well be that the *acquisition* of the full-blown concept 'horse' requires more than mere perception, but that does not entail that, once acquired, the concept couldn't be *applied* in mere perception. It seems to me that when I look up from my novel and out of the train window to gaze at the peaceful sight of a grazing white stallion I simply and immediately recognise it precisely as a *horse.* There is no kind of movement of thought from seeing it as some whitish thing to realising that – "oh yes! that, I wager, must be a horse." But whichever way one wants to cut this cake, there remains the fact that a condition for the possibility of making basic empirical judgements is an ability to

identify objects without making judgements. And this ability is just what we display in *intuition* – which is the ability *simply* to identify an object as falling under a concept – thus of having a simple determinate representation of a particular object as being of a certain kind – of having a *particular* representation.

A basic empirical judgement, in contrast, could be said to be a complex determinate representation of an object, where the object is not only represented as falling under one concept through which it is immediately cognised, but also as falling under a second concept – that which is attributed of it. A concept on its own – considered in abstraction from its use in judgement – could be termed an indeterminate or general representation of some object, or rather: as a representation of what is common to many objects – a general representation.

Now we are beginning to make sense of the Kantian terminology: Understanding and sensibility combine to endow us with a cognitive capacity – a faculty of *cognition* – whereby we can represent objects *in abstracto* by concepts, and *in concreto* by intuitions. Now judgings consists in conscious relations, "holdings-together" of cognitions. In expression of a basic empirical judgement, the subject clause represents an intuition, and the predicate concept represents a property being attributed to the intuited object. Note how well this fits with what Kant has to say about the relation of judgements, concepts and intuitions in his "Clue to the Discovery of all Pure Concepts of the Understanding":

> [T]he understanding can make no other use of these concepts than that of judging by means of them. Since no representation pertains to the object immediately except intuition alone, a concept is thus never immediately related to an object, but is always related to some other representation of it (whether that be an intuition or itself already a concept). Judgment is therefore the mediate cognition of an object, hence the representation of a representation of it. In every judgement there is a concept that holds of many, and that among this many also comprehends a given representation, which is then related immediately to the object.[148]

We can also make sense of Kant's dichotomy between intuitions and concepts:

> Intuition and concepts therefore constitute the elements of all our cognition, so that neither concepts without intuition corresponding to them in some way nor intuition without concepts can yield a cognition.[149]
>
> Thoughts without content are empty, intuitions without concepts are blind.[150]

[148] A68/B93

[149] A50/B74

The superficial reading of this, which inspired the simple view, was that neither concepts nor intuitions can yield cognition by themselves, but only in combination. But this, as we have seen, failed to make sense of Kant's definition of concepts and intuition as different species of the genus cognition. To make sense of it, we need to read the quoted passage carefully: Note that the claims made for intuitions and concepts respectively are not symmetrical. Rather, slightly different claims are made for each of them:

– *Intuitions*, it is claimed, cannot yield cognition without concepts, full stop.

– *Concepts*, on the other hand, cannot yield cognition without an intuition *corresponding to them in some way*.

If the claim was that concepts and intuitions must always be joined to yield cognition, one would expect Kant to say simply that neither intuitions without concepts nor concepts without intuitions can yield cognition; but that is not what he does. He adds an important qualification to the claim about concepts: "an intuition *corresponding to them in some way*".

Now, I have argued that a concept is a component part of any intuition. This immediately explains why an intuition without a concept cannot yield a cognition, because it then lacks a necessary ingredient – it is not a complete intuition – it is in Kant's terms *blind.* This entails that a concept could become part of an intuition if it is added to the sensible part of intuition – the mere sensation. And then it would seem plausible to read the claim that a concept must have an intuition corresponding to it in some way or other simply as a requirement that it be in principle possible for a concept to be added to sensation, to be applied to a sensible object, if that concept be capable of yielding cognition. If there were some reason why a concept could not be applied to a sensible object – which is to say that no intuition corresponded to it in any way – then that concept would be incapable of yielding cognition – which is to say that it could not represent objects. It would, in Kant's terms be *empty.* Thus, on the assumption that a concept is always an ingredient in an intuition, we have a clear explanation of why intuition without concepts cannot yield cognition, and a plausible explanation of why concepts must have "an intuition corresponding to them in some way".

– *A concept* must be applicable to some sensible object; otherwise it is *empty*.

– *An intuition* must comprise a concept (as well as a sensation of an object); otherwise it is *blind*.

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[150] A51/B75

d) Problems with the fuller view

In fairness, we should note that this fuller view of intuitions and judgements is itself not completely free of tension with Kant's text. For instance, in the footnote to *Metaphysical Foundations to Natural Science*, quoted on p. 20, Kant implies that judgement is required for cognitions of objects:

> …the precisely determined definition of a judgement in general (an act by which given representations first become cognitions of an object).[151]

One way of reading this is to suppose that "given representations" include intuitions, and that only by being subsumed under a concept in a judgement do intuitions become cognitions of objects. This would mean that an intuition *by itself* does not count as a cognition and thus does not represent an object; and so this supports the simple view.

However, intuitions are *defined* as a species of cognition, which is irreconcilable with the simple view. Taken at face value, the quotation seems to commit Kant to holding that judgement is required even for simple intuitions. But this again, conflicts with the bi-conceptual view of judgements which in turn is necessary to make sense of the fundamental analytic/synthetic distinction. We should note that the quotation is not from the *Critique* itself, and although commenting on the *Critique*, it is written at a different time and in a slightly different context, so it is perhaps not too surprising if there are slight inconsistencies in the terminology.

One way of resolving this is to assume that Kant should have said *experience* or *knowledge* rather than cognition, which would make the quoted passage state that while intuitions *represent* objects, only in judgements do they serve to constitute *knowledge* of those objects.

Another way of reading it is to assume that by "judgement" Kant is here thinking of the contribution of *understanding* in *all* kinds of cognition, i.e. in the conceptual elements in intuitions, and the logical functions of judgements. One way of disambiguating this would be to distinguish between *judging* as any activity of the understanding, and *judgements* as the results of deliberate exercises of such acts. The tension implicit in the above quotation could then easily be resolved along the following lines: Instances of *judging* are involved in all cases of cognition: freely and responsibly where it results in explicit judgements, and passively and involuntary in the case of

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[151] 4:476 n.

perceptions, whereas *judgements* are the expressible contents of free and responsible judgings.

In any case, I shall claim that the fuller view of intuitions and judgements, such as I have presented it here, provides for a much more fruitful reading of the *Critique* and for carrying Kant's project to a successful completion. I hope that the use to which I put the fuller view in the following chapters will justify this claim.

e) Judgments, intuitions and sortals

On p. 83 I mentioned the idea of a basic empirical judgement, and defined it as the attribution of some property to some identified object. The successful making of a correct basic empirical judgement thus requires the correct performance of two distinct tasks: first the identification of an object and then the further attribution of some property to that object. A paradigmatic example of such a basic empirical judgement would be:

(2) That apple is ripe

This distinction between identification and attribution in *judging* reflects a *formal structure* of empirical *judgements*. To trace this distinction accurately, we need to specify three separate levels at which an empirical judgement can be described. First there is the level of representation, where we find such things as *concepts* and *intuitions*. Next judgements are *expressed* by words – so there is an analysable linguistic level. Finally a judgement is *about* things in the world – objects and properties, which are *represented* by the things at the representational level. Inasmuch as words are used to *express* concepts, we can legitimately talk of words also as representing things in the world in virtue of the representance of the concepts they express.

The distinction between identification and attribution in a judgement can be traced through all these three levels, and it will be useful to keep these apart by observing consistent terminological distinctions between them:

In the world we find the particular object or collection of objects of which the judgement is true if it is true, which I shall refer to as *'the subject'*[152] of a judgement; and we find the property which is attributed to the subject, which property I shall refer to as *'the attribute'*.

[152] To avoid confusion, I shall always use the term 'subject' to refer to that object or objects in the world which a judgement is *about,* i.e. the subject *of* a judgement; never the "subject" *making* the judgement.

In verbal expression a judgement will contain a *subject clause* and a *predicate clause*. A predicate clause typically involves simply the word for a predicate concept, such as "white", which I shall refer to simply as *'a predicate'*.

At the representational level we find the *subject concept* which is employed in the *intuition* of the subject, and we find a *predicate concept* representing the attribute as a property of the subject.

Since the verbal level *expresses* the judgement at the representational level, we should be able to work towards an analysis of formal aspects of judgements by looking at formal aspects of their linguistic expression. And from what we have discussed so far, we can now indeed begin to generalise from (2) to an analysis of the form of a basic empirical judgement. Let us symbolise the subject concept word by 'S' and the predicate concept word by 'P', and then the first approximation towards the general form of a basic empirical judgement can be written as

That S is P

Note that whereas the predicate concept – in the case of (2), 'ripe' – is sufficient to specify the property attributed the subject concept alone does not suffice to determine the subject of the judgement. The concept 'apple' represents any and every apple, and to give your rational consent to my expressed judgement, you need to know which particular apple I am on about. Hence, in the case of (2), the *indicator* 'that' (and relevant facts about the context of utterance, such as the direction of my gaze, movement of my hands etc.) *in conjunction with* the subject concept word will serve to determine which particular object or collection of objects is the intended subject of the judgement. If I were to say simply 'apple is ripe' I would fail to express a meaningful judgement at all.

Other than the indicator 'that' I could use 'this' or else various *quantifiers* like 'all', 'some', 'many', 'part of' etc.[153] Quantifiers and indicators serve to determine which particular instance or instances of the general concept 'S' the judgement is about, i.e. to *determine* in conjunction with the subject concept the actual subject of the judgement.

[153] Note that the distinction between indicators and quantifiers is not sharp. Most indicators will have a quantifying function by implying unique quantification: "That man" can be read e.g. as "the unique man being indicated". Correspondingly most quantifiers when used in judgements will rely on some degree of implied indications, such that e.g. "All the apples are ripe" must normally be understood as "All the apples saliently present are ripe" or something along those lines.

Therefore I shall use the general term *'determiner'* for any indicator or quantifier used with the subject concept word in expressing a judgement. I shall refer to the determiner together with the subject concept as 'the subject clause'.

Let **'Θ'** represent any determiner, and we can now specify the general form of a basic empirical judgement as

ΘS is P

In expressing to you my judgement that (2), the subject clause enables you to identify the particular object of the kind S of which the predicate P is supposed to hold. The subject clause thus performs the same function in *expressing* a judgement as the intuition does in *making* it. It would therefore seem reasonable to think that an intuition must possess at least the same degree of logical structure that the subject clause of a basic empirical judgement does – i.e. it must be analysable *at least* in terms of a determiner and a concept.

Now, we may notice that not all concept words can meaningfully be combined with a determiner to form a subject clause. Note the absurdity of

(3) *That ripe is tasty
(4) *Some rounds are yellow

Not all concept words are capable of being combined with determiners to form meaningful subject clauses. The absurdity of certain concepts in subject position in a judgement corresponds to an absurdity in trying to form questions of the form "How many …". It makes perfect sense on many occasions to ask, e.g. "How many apples are there [in this basket]?", but it is plainly nonsense to ask "How many ripes are there?". We can of course enquire how many *ripe apples* there are, but then we are using the compound concept *ripe apple*, and it is the concept 'apple' that enables us to make sense of the 'How many'- question.

Those concepts whose concept words can successfully be combined with determiners to make subject clauses and about which it also makes sense to ask 'How many'-questions are called *sortal* concepts. The crucial feature of sortal concepts is that they are associated with *identity criteria.* For a sortal concept there is some empirical criterion or criteria by which we can determine whether an instance of the concept is the same as an instance cognised elsewhence – there is as it were some way of telling where one instance

stops and another one begins.[154] This is precisely the idea of particular objects – instances of universals of which it makes sense to assert or deny numerical identity. The sortal concepts are, in other words, *concepts of objects.*[155]

This explains why there is the same kind of absurdity in trying to form both subject clauses and 'How many'-questions using words for non-sortal concepts. Remember that the determiner is needed to specify which particular instance or instances of a concept is supposed to be the subject of a judgement, and it only makes sense to determine the *particular* instance of a concept if that concept is associated with some kind of identity criteria.

This means that only sortal concepts can appear as subject concepts in judgements and qualitative concepts can, at least on their own, only appear as predicates; but note that the converse does not hold: both sortal and qualitative concepts can appear as predicates of perfectly meaningful judgements, as for example in the following:

(5) That animal is tall
(6) That animal is a horse

This in turn entails that any intuition must have a logical structure analysable at least in terms of a determiner and a sortal concept.

f) Towards an analysis of judgement

We have now come some way towards the "definition of a judgement in general" that Kant claimed was the premise needed to explain the validity of the Categories (see p. 20). The approximation we have achieved so far is to say that a basic empirical judgement can be formalised as

ΘS is P

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154 In the case of mere general features, the concepts of which we could call *qualitative* concepts there are no such clear identity criteria; it does *not* make the same kind of determinate sense to ask how many shades of blue that exist, as it does to ask how many branches there are on a particular tree.

155 Considerations of these kinds give rise to a whole interesting debate about the notion of 'thing' or 'material object' itself. The notion of 'material object' seem to contain the minimum requirements for the very idea of sortality – in the sense that any sortal concept must contain the idea of a material object, yet the concept of a material object does not seem to function as a fully operative sortal concept. There seems to be no clear, determinate answer to questions like "How many material objects are there in this room?" Should the legs of a table count as individual objects or is it the table as a whole that is an object?

This, however, is a debate that I shall not be able to enter into here.

where 'Θ' symbolises the determiner; 'S' the subject concept, which is always a sortal concept; and 'P' the predicate concept which can be either a sortal concept or a qualitative concept. Any empirical judgement must have at least these three irreducible components.[156]

We shall now again pick up the discussion from the *Critique,* and see how Kant elaborates his claims about the definition of a judgement in general and how he draws further conclusions from there.

4.2 Kant's table of Judgements

The main part of Kant's Analytic Premise is that all forms of judgement "can be brought under four titles, each of which contain under itself three moments."[157] These four sets of moments constitute Kant's famous *table of judgements.*

The idea behind the table of judgements must be that it is supposed to give the minimal exhaustive classificatory scheme for empirical judgements, by which I mean that all possible empirical judgements must be supposed to fit into the table, and none of the terms used be reducible to other terms of the table. As I mentioned at the end of section 2.1, the table of judgements is introduced without a shred of justification or evidence, beyond Kant's saying that "the labors of the logicians were ready at hand".[158] A minimal exhaustive classificatory scheme of judgements must properly be derived by a process of analysis and induction from observation of the different judgements that we do in fact make, and as I have argued in the above mentioned section, showing its justification would consist in challenging the opposition for counter-examples rather than giving direct proof of its correctness. Nevertheless, there must of course be some reason for why Kant thinks that the table of judgements contains just the "moments" he lists and no others. The point seems to be that he in essence lifted the table of judgements from the received formal (in Kant's terms: "general") logic of his day and then made the necessary adjustments for a transition from general logic to "transcendental logic". The major problem with this (and there are many minor ones) is that "the labors of the logicians" seem in retrospect to have been left largely unfinished. Forms of judgement and valid inference patterns that today are recognised and accounted for, were not

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156 This is not to say that every verbal expression of an empirical judgement must contain distinct words corresponding to these components – the logical structure might well be merely implicit in particular verbal expressions of judgements in particular languages.

157 A70/B95

158 *Proleg.* IV:323

included in the essentially monadic and syllogistic logic of Kant's day. This makes it seem highly implausible that Kant's table of judgement is complete, which would entail that his analysis of experience is at best a partial analysis. And even if we accept the table of judgements as a merely partial analysis, doubts may still be raised about the correctness of the table such as it is. I am not going to enter into this debate, though. It seems to me that the important idea for Kant is the existence of a limited number of forms of judgement – thus, the existence of a table of judgements as such, and while the "divisions" and "classes" of the table are significant, the individual functions falling under each of the classes are often less essential.

Before we proceed, we should list the table of judgements as Kant presents it:[159]

1. Quantity of Judgments	***3. Relation***
Universal	Categorical
Particular	Hypothetical
Singular	Disjunctive
2. Quality	***4. Modality***
Affirmative	Problematic
Negative	Assertoric
Infinite	Apodictic

The table of judgements

The table is divided into four *classes*, in each of which there are three *moments*, making a total of twelve moments. The first thing we should note is that the table of judgement does *not* simply list twelve *kinds* of judgements. Rather, the moments are supposed to represent "logical functions of judgements"[160] – roughly formal aspects of judgements. As should be the case in Kant, in this thesis the term 'form of judgement' should always be taken as 'formal aspect of judgement', *not* as 'kind of judgement'.

To specify a kind of judgement using the classificatory system of the table of judgements, it would be necessary to mention four moments, one from each of the classes. Any judgement is supposed to be characterisable by one of the moments from

159 A70/B95

160 B128, 143

each of the classes, so that e.g. "That animal is a horse" would be a particular, affirmative, categorical, assertoric judgement. This means that there should be a total of eighty-one different irreducible kinds of judgements, each classifiable by one of a set of three mutually exclusive and jointly exhaustive moments from four classes of formal aspects of judgements. But the situation is in fact even more complicated, since some judgements consist of combinations of simpler judgements. As Strawson notes:

> A hypothetical proposition, for example, might have a universal antecedent and a singular consequent. Is it then universal or singular?[161]

But this is really not a grave problem. The idea of a minimal exhaustive classificatory scheme of judgements seems sound enough.

Since the soon-to-be announced table of categories has the same structure as the table of judgements – four divisions, each with three sub-divisions – and is supposed to be derived from it, one must suppose that the subsequent arguments from "forms of judgements" to the validity of categories should properly go not from a *kind* of judgement to a category, but from a formal aspect of a judgement to a category. Unfortunately it is not always clear that this is the case in the actual arguments Kant puts forward.

I shall not attempt to argue for the completeness or correctness of Kant's table of judgements – indeed I shall in the course of the following discussion suggest a number of amendments and corrections to it. What I think is correct and important is the idea that all empirical judgements can be classified by some minimal set of formal terms, and that a number of the terms in Kant's table are just such minimally specific terms of formal aspects of judgements. I shall then try to show how from premises to the effect that we make judgements of a specific form we can draw conclusions as to the validity of pure concepts and of pure principles.

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[161] Strawson 1966, p. 79

Chapter 5 – The Key to Metaphysics

As mentioned in the section on the overall argumentative strategy of the *Critique*,[162] Kant claimed prior to the publication of the 2nd edition that the explanation of how experience is possible only by means of the pure concepts could be solved "almost by a single conclusion from the precisely determined definition of a judgment in general."[163] I take it in turn that the claim that experience is possible only by means of the pure concepts is a crucial step in solving the problem of the Key to Metaphysics,[164] namely the question of how pure concepts relate to their objects.

By this stage in the *Critique*, Kant has stated what I have referred to as The Analytic Premise[165] – the precisely determined definition of a judgement in general. This consists in the implicit analysis of a judgement as consisting of the conscious combination of at least two concepts as applying to a perceived object or collection of objects,[166] and the claim that empirical judgements can be classified in terms of the Table of Judgements.

We should now examine the "single conclusion" whereby Kant claims to be able to show the validity of the categories. Unfortunately, it is hard to argue that Kant is not guilty of being somewhat cavalier in claiming that no more than a single conclusion is needed, especially since he, as I am going to claim, spends no less than 165 pages on completing this argument. The Key to Metaphysics – the proof of the validity of the categories is officially treated in "the Transcendental Deduction of the Pure Concepts of Understanding", but we shall see that the Transcendental Deduction really just presents a preliminary outline of the arguments needed, and that these are completed in the subsequent "Analytic of Principles".

Nevertheless, there is quite a clear line of argument to be traced, and trace it we shall, focusing on those elements needed to account for our knowledge of causal facts.

Since the claim that the validity of the categories can be shown to follow from a formal analysis of judgements clearly pertains only to the revised 2nd edition version of the Transcendental Deduction I shall here concentrate on this version of the arguments.

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162 See p. 20

163 Found. p. 476 n.

164 See p. 14

165 See p. 21

166 See p. 81

5.1 Kant's table of categories

The presentation of the table of judgements takes place in a section called "On the Clue to the Discovery of all Pure Concepts of the Understanding".[167] The first two sub-sections of the Clue are devoted to presenting the table of judgements and explaining the points at which one might be surprised to see divergence from a table produced by general logic. Since it would seem that quite a lot of the table might be surprising and since I shall not be arguing for the completeness or correctness of the table as a whole anyway, we can safely leave aside these considerations here.

What is of interest is the third sub-section of the Clue. It is here that the Categories – the Pure Concepts of the understanding – those of which we aim to explain their representance – first make their appearance.

This is the list – the table of categories – as presented by Kant:[168]

1. Of quantity	***3. Of relation***
Unity	Of Inherence and Subsistence – *(substance and attribute)*[169]
Plurality	Of Causality and Dependence – *(cause and effect)*
Totality	Of Community – *(reciprocity between agent and patient)*
2. Of quality	***4. Modality***
Reality	Possibility – Impossibility
Negation	Existence – Non-existence
Limitation	Necessity – Contingency

The table of categories

Precisely what the relation between the table of judgements and the table of categories is supposed to be is quite a difficult question, both in general terms – how the latter table is supposed to be derived from the former – and in the specific cases of the correspondence of a particular category to a particular form of judgement, and Kant's clue really is that – no more than a clue. Further it is really no more than four pages of the Clue that actually deal with this relation between the two tables[170] – the rest are devoted to discussing the finer specific points of the contents of each of the tables. And these four

167 A66/B91 ff.

168 A80/B106

169 Rendering this in English, rather than the Latin of the original: *"substantia et accidens".*

170 A76–9/B102–6

pages are by no means easy to make sense of. I shall not claim to be able to explain all the details of Kant's arguments but I do believe that there is a viable line of argument to be conjectured from elements in the text.

The first important point to note is that there is supposed to be a strict one-to-one correspondence between the two tables.

> In such a way there arise exactly as many pure concepts of the understanding, which apply to objects of intuition in general *a priori*, as there were logical functions of all possible judgments in the previous table…[171]

The table of categories must therefore be supposed to *derive* from the table of judgements by some unitary principle applicable to each of the forms of judgement. This unitary principle is what is referred to by the anaphoric "in such a way" of the above quotation, and we shall return presently to just what this principle might be. But first we should note that the categories – the pure concepts of understanding are said to *apply to objects of intuition in general* a priori. They are concepts under which objects of intuition – ordinary objects like horses, apples and men – fall. These concepts apply to objects of intuition in general and *a priori.* I take this to mean that the categories apply to each and every object of intuition ("in general"), and that the validity of this application is not dependent on experience *("a priori").* Whether *all* the categories apply to *all* objects of intuition or whether the claim is just that for all objects of intuition there is *some* category or categories that apply to them, should as yet be left open. The categories are concepts of ordinary objects, but their representance is not supposed to be explainable by way of experience, hence the need for the Key to Metaphysics.

So categories are concepts that apply independently of experience to all objects of intuition. Further each category can be derived from a corresponding form of judgement by some common principle. But what exactly is this principle?

In the passages immediately preceding the above quotation, Kant links the way that categories arise from the forms of judgement to the notion of "pure synthesis, generally represented".[172] Now, this notion of pure synthesis is, even by Kantian standards, quite a difficult one. Kant is still only giving a clue to the discovery of the categories, and the notion of pure synthesis figures more heavily in the ensuing Transcendental Deduction. I shall look more closely at it in that context, in section 5.2b) below. But to make sense of

[171] A79/B105

[172] A78/B104

Kant's clue, we need to summarise and anticipate somewhat the treatment of the notion of synthesis in general:

Central to understanding the notion of synthesis is the important Kantian claim that while the *matter* of empirical knowledge must always be given by the senses, its *form* is in important respects contributed by understanding. *Synthesis* is the supposed process whereby understanding *forms* the matter given by sensibility into cognitions and judgements – the process in which the understanding as it were inserts its formal contribution into experience. By arguing in various contexts that it is the *same* synthesis that is operative at different levels, Kant is able to conclude that these different levels display identical formal features. We shall see, however, that while the sharing of formal structures can and does establish the claims that Kant needs, the claims of sameness of synthesis is both poorly supported and largely irrelevant to the formal similarities that need to be established. I shall therefore try to show that these claims to formal similarities can be established from arguments that are independent of the problematic notion of synthesis.

But we are still in need of an account of the single principle by which the table of categories is derived from the table of judgements, and we want to know why the categories apply independently of experience to all objects of intuition.

First of all one should recall that the validity of the categories was supposed to be explainable "almost by a single conclusion from the precisely determined definition of a judgment in general". One would therefore expect arguments from this definition of a judgement in general – i.e. from forms of judgements. This, however is not what appears to be the case in the 2nd edition version of the Transcendental Deduction. Instead the arguments go from an alleged necessary unity of *self-consciousness*, via a corresponding necessary unity of *intuitions* to a claim that all objects of intuition stand under the categories.

The necessary unity of self-consciousness is important in explaining another pure concept, namely the concept of the soul – or the *self*, as we would say in today's parlance – but that is not crucial for the purposes of this thesis, so I shall again side-step these considerations. What *is* important though is the considerations about any necessary conditions for intuitions. If it could be shown that some of the formal aspects of judgements must also be formal aspects of intuitions, i.e. that intuitions and judgements share some of the same forms, then we would seem to have the missing link between

Kant's claims about how the validity of the categories *could* be shown (from the definition of judgement), and how he actually presents it in the *Critique* (from the unity of intuitions).

A passage in the Clue seems to hint at this identification of forms of intuitions with forms of judgements, though still by way of a notion of synthesis:

> The same function that gives unity to the different representations **in a judgment** also gives unity to the mere synthesis of different representations **in an intuition…**[173]

Kant's official term for forms of judgement is "logical functions of the understanding in judgments", so if the same function operates on judgements and on intuitions, as is implied by the above quotation, then it does indeed appear that Kant holds that some forms of judgements are also forms of intuitions. We shall return presently to how this makes sense of the arguments in the Transcendental Deduction proper, but first we need to get clearer about exactly what the relation is between the two tables.

What must be taken to be Kant's explanation of this is found in the continuation of the above quotation, in a paragraph that unfortunately is so dense as to be all but incomprehensible:

> The same function that gives unity to the different representations **in a judgment** also gives unity to the mere synthesis of different representations **in an intuition,** which expressed generally, is called the pure concept of understanding. The same understanding, therefore, and indeed by means of the very same actions through which it brings the logical form of a judgement into concepts by means of the analytical unity, also brings transcendental content into its representations by means of the synthetic unity of the manifold in intuition in general, on account of which they are called pure concepts of the understanding that pertain to objects *a priori;* this can never be accomplished by universal logic.[174]

I shall try to unpack the various interrelated points here. First of all "the same function that gives unity …" must be just any of the forms that judgements and intuitions have in common. Let's call this a common form of judgement for the present. Further, such a form "expressed generally" is *called* the pure concept of understanding – i.e. the category. So, we can conclude:

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173 A79/B104–5

174 Ibid.

– A category is a *name* for a common form of judgement

Further, pure concepts of the understanding pertain to objects *a priori*. So, the categories are *concepts* that apply to objects.

– The categories are concepts of objects

The categories apply to objects by means of "the synthetic unity of the manifold in intuition in general". Forms of judgement are called logical functions of the understanding, and the *same* functions give unity to judgements and intuitions so the unity of the manifold in intuition must be due to a common form of judgement, and since the categories apply to objects "on account of" the unity of the manifold in intuition, it follows that the categories must apply to objects somehow in virtue of – by way of – the common forms of judgements.

– The categories apply to objects by way of the common forms of judgements.

Bringing these three claims together we can conclude that a category is the concept of an object or objects insofar as it is the subject of a judgement of a specific form. So far we can treat this notion of categories purely as a matter of definition.

If there are forms of judgements, and we have concepts of them, then we can clearly form concepts of objects as being the subject of judgements of these forms. *That is just what the categories are.*

This is of course still extremely abstract and preliminary, but then we are still discussing claims made in a section that is called "On the Clue to the Discovery of all Pure Concepts of the Understanding", which suggests that we should not expect anything more than just a clue to how the categories can be explained. What remains to be shown is that these concepts apply not only to objects that are subjects of empirical judgements, but also to objects of *intuition;* and also that these concepts of objects as subjects of empirical judgements are identical to the pure concepts of the metaphysical tradition. This task is started in the Transcendental Deduction and completed in the Analytic of Principles, as we shall see.

J. M. Young in his "Functions of thought and the synthesis of intuitions" seems to arrive at much the same conclusions about the relation between forms of judgement and categories:

> [T]he categories *are* the functions of judgment employed in a certain way.[175]
> Insofar as they serve to give unity to the synthesis of intuition, the functions of thought are said to constitute pure concepts of understanding, or categories.[176]

However, Young thinks there is a problem in explaining why the categories should also be applicable to objects of intuition:

> Kant asserts that the logical functions of thought also constitute concepts that must be applicable to things given in sensible intuition. It is hard to see why he should think this.[177]

As we shall see, given the fuller view of judgements and intuitions (see section 4.1c), and the identification of some forms of judgements and forms of intuitions, it will become clear why Kant, quite rightly thought that the concepts of the functions of thought must indeed apply also to objects of intuition.

Paul Guyer in this article on "The Transcendental Deduction of the Categories" gives two formulations of what Kant takes the categories to be:

> [W]hat he means by a category is, in fact, just a concept of an object, which allows the application of a judgment to that object.[178]
> These categories are supposed to describe twelve different ways of conceiving of objects that are necessary in order to make the twelve different logical functions of judgment applicable to them.[179]

Guyer thinks there is an ambiguity in Kant's views in that he (Kant) sometimes seems to hold that the categories somehow facilitate the representation of the manifold of intuitions *as an object*, and sometimes for the representation of it as *the object of a*

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175 Young 1992, p. 103

176 Op. cit. p. 105

177 Op. cit. p. 108

178 Guyer 1992, p. 129

179 Op. cit. p. 134

judgement. Again, once we see how forms of intuitions are identical to forms of judgements, we shall see that this ambiguity is only apparent.

We have now been presented with the table of forms of judgements, and we have been given the clue that we can form concepts of objects falling under these forms of judgements and that these could be called categories. I shall turn now to the explanation of how such categories can and must apply to *all* objects of experience, which is the aim of the Transcendental Deduction.

5.2 The Transcendental Deduction of the Categories

a) The function of the Transcendental Deduction

In seeking to understand the Transcendental Deduction of the Pure Concepts of the Understanding, it is first of all important to understand what it is *not.* Given its name, it is only too natural to expect deductive arguments yielding as conclusions the existence of each of the categories. This however, is not the point of the Transcendental Deduction. The *existence* of pure concepts (and of pure principles) is simply an observable fact of human cognitive practices. Kant is completely explicit about this in the 2nd edition Introduction to the *Critique:*

> We are in possession of certain *a priori* cognitions, and even the common understanding is never without them.[180]
>
> [I]f one would have one [example] from the commonest use of the understanding, the proposition that every alteration must have a cause will do…[181]
>
> Not merely in judgments, however, but even in concepts is an origin of some of them revealed *a priori*…[182]

Kant thinks it can be shown that a number of our concepts and principles do no doubt *purport* to apply *a priori* – they are not derived or abstracted from experience – and we shall examine later arguments to show that this must indeed be the case. What is in question is whether these concepts really *refer* to anything, which is to ask whether they

180 B3

181 B5

182 Ibid.

are *validly* employed. If they are not, we should be forced to conclude as Hume did, that e.g. necessity, and by implication: causality "is nothing but an internal impression of the mind".[183] The existence of purportedly pure concepts is not in doubt, and it is just these concepts that have long been at issue in metaphysics. However, Kant thinks that thus far, though we have undoubtedly recognised some of these concepts as such, we have really not done so by any reliable method, but as he accuses Aristotle, "merely rounded them up as he stumbled on them".[184]

Kant's purportedly novel idea is that all the pure concepts stem from a common root, namely from the forms of judgements. Thus, he has presented the very appropriately named "Clue to the Discovery of all Pure Concepts of the Understanding". Now, he has to show the details of this discovery, and this requires him to establish two quite separate claims:

Claim 1: The pure concepts are identical to the concepts of objects considered as subjects of forms of judgements

Kant has shown that we can form concepts of objects falling under judgements of the various forms, and he has claimed that these are the pure concepts – the Categories. This is of course in one sense a definition of the Categories, and it would be possible now to proceed directly to showing how such concepts could be validly applied to objects of experience. The problem is that this approach amounts to an introduction of the pure concepts as technical terms – to giving a *synthetic* definition of the Categories[185] – hence to *make,* to legislate, the proper definition of the Categories. But our starting point was the *given,* observable fact that pure concepts are employed in experience, and we have as yet no reason to assume that this introduction of "Categories" as a technical term bears any relation to the pure concepts that are found to be employed in experience.

All Kant has done so far is to give a synthetic definition of *putative* categories. Now he has to show that the categories thus synthetically defined are identical to the pure concepts which we can find by analysis to be employed in empirical knowledge. Kant needs to establish the identification of the synthetically and analytically defined categories.

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183 See p. 67

184 A81/B107

185 See p. 25, section 2.1

Claim 2: The pure concepts apply to objects independently of and throughout experience.

Kant needs to show that the way he has explained the origin of the pure concepts also accommodates an explanation of how these pure concepts can apply to their objects. We still need an explanation of their *representance.*

Establishing these two claims together would constitute an explanation and justification for the categories' valid employment to objects of experience – a demonstration of the *validity* of the categories. This is what the Transcendental Deduction is about.

Kant's use of the term 'deduction'

In the legal terminology which Kant borrows to describe his project, we may say that while the factual question *("quid facti")*[186] is determined, there remains the question of *right* or validity *("quid juris"),*[187] and a proof of this is called a *deduction.*

Dieter Henrich, in his paper "Kant's Notion of a Deduction" offers an invaluable insight into the background for Kant's terminology:

> In Kant's philosophical language, the meaning of the term "deduction" is different from what we almost irresistibly expect … the logical procedure by means of which a proposition – namely, the conclusion – is established through the formal relationship of other propositions, its premises. Thus we take a deduction to be a syllogistic proof. Kant was familiar with this usage of the term "deduction". Yet, unlike now, this was not the only, and not the most common, usage in eighteenth-century academic language…[188]
>
> …By the end of the fourteenth century, there had come into being a type of publication that by the beginning of the eighteenth century (when it had come into widespread use) was know as *Deductionsschriften* ("deduction writings"). Their aim was to justify controversial legal claims…[189]
>
> …within the fast-growing methodological literature on law, academic jurists provided analyses of what a deduction was and guidelines for a deduction's author. …one of the methodologists produced the following criteria for a good deduction: Since a deduction is not a theory for its own sake, but rather an argumentation intended to justify convincingly a claim about the legitimacy of a possession or a usage, it should refrain from unnecessary digression, generalizations, debate about principles and so forth, which are of interest

186 A84/B116

187 Ibid.

188 Henrich 1989, p. 31

189 Op cit. p. 32

> only to the theoretician. A deduction should be brief, solid but not subtle, and perspicuous.[190]

One important consequence for this is that we should not expect any one particular style of arguments. As mentioned in the introduction, Kant is engaged in presenting a *theory of knowledge*. In presenting a theory, he is of course justified in using a variety of different arguments, analytic and synthetic, as well as presenting theoretical *hypotheses*. Kant is not obliged to give direct, justifying arguments for each and every assertion in the Transcendental Deduction. Much of the structure of the argument should be seen as *hypothetico-deductive*. To a large extent Kant propounds hypotheses to be tested against their ability to explain the phenomena. The overall argumentative structure of any proposal of a theory must be an "inference to the best explanation". If Kant's theory is superior to the competitors, then that is a justification of his theory.

> The very notion of a deduction is compatible with any kind of argumentation suitable for reaching the goal – namely, the justification of our claims to a priori knowledge.[191]

The Transcendental Deduction and synthetic a priori *judgements*

Central to Kant's analysis of metaphysics is the claim that it must consist of synthetic *a priori* judgements, and part of the "Main Transcendental Question" of the *Prolegomena* is 'How are synthetic judgements *a priori* possible?'[192] Now given that the Categories just are *pure* or *metaphysical* concepts and that these Categories – these metaphysical concepts – are claimed to make experience possible, it may seem natural to assume that the Transcendental Deduction should itself employ synthetic *a priori* arguments – that is arguments supporting synthetic *a priori* conclusions.

Paul Guyer, in his *Kant and the Claims of Knowledge*, discusses objections to the Transcendental Deduction that seem to rely on such a view.

> Several writers have asked what status the premises of Kant's arguments must have if they are to deliver synthetic *a priori* conclusions. Can such conclusions be derived from nothing but analytically true premises? That seems impossible, but there has been disagreement about the point at which synthetic premises must enter Kant's arguments. One view has been that Kant's transcendental arguments must begin from a premise which

190 Op. cit. p. 33–4 (I shall not claim that Kant attains all these methodological ideals.)

191 Op. cit. p. 39

192 See, e.g. p. 13

> is synthetic *a priori* – such as the premise that we have experience at all – but then proceed to their conclusion by entirely analytical inferences – thus, for example, by analysis of the concept of experience. The requisite analyses may not be obvious – hence the difficulty of transcendental arguments, after all – but they ultimately show only the analytical consequences of the original synthetic premise, and thus transcendental arguments are at best unobvious analytical arguments.[193]

And it seems that Guyer holds that this is in fact close to the actual argumentative strategy employed by Kant:

> …what Kant himself explicitly recognized as a transcendental deduction always assumes a *synthetic but necessary truth* for its premise…[194]

I think the assumption that the Transcendental Deduction needs synthetic *a priori* judgements is a mistake. Kant's claim is that *metaphysics* consists of synthetic a priori judgements, and it must be borne in mind that the *Critique* is *not* a piece of metaphysics, but of transcendental philosophy.[195] Metaphysics is its *object*, not its *method.* To be sure, the pure principles of understanding, the justification of which is prepared in the Transcendental Deduction, are synthetic *a priori*, but the explanation of their validity need not be. There is no claim that transcendental philosophy needs to consist of synthetic *a priori* judgements.

Further this assumption seems to rest on taking the Transcendental Deduction as being a deduction in the *modern* sense, i.e. involving deductively valid arguments, rather than as a deduction in Kant's archaic *legal* sense, i.e. as *outlining a claim to validity*. The temptation is to take the valid application of the pure concepts or else the pure principles as *conclusions* to be deductively inferred from some incontrovertibly true premises, and then one might need to assume that some of these premises must themselves be synthetic *a priori*.

But the valid application of the pure concepts and the purported truth of the pure principles are neither conclusions nor premises in the Transcendental Deduction. They are *explananda*. We find ourselves accepting the validity of the application of pure concepts and the truth of pure principles, and stand in need of an explanation of how this is possible – we require a *theory* for these kinds of cognitions, and the Transcendental

193 Guyer 1987, p. 419

194 Guyer 1987, p. 77

195 See p. 17

Deduction is an outline of such a theory. Note how this reading of the Transcendental Deduction answers an objection noted by Guyer:

> …Kant's own conception of a transcendental deduction always involves a premise which is at least tacitly, if not explicitly, a claim to synthetic *a priori* knowledge. Although only a proof that even empirical judgments have *a priori* conditions might seem like a compelling deduction of such conditions to us, the hard fact is that Kant no more than hints at the possibility of a transcendental deduction with such a premise in the official texts of the deduction and instead relegates the exploitation of such a premise – though only such a premise was contemplated in the original transcendental theory of experience – to the subsequent "Analytic of Principles".[196]

That the deduction involves a "premise" that is a claim to synthetic *a priori* knowledge is only natural, if such a claim is precisely what Kant seeks to *explain* – to "validate". And the Transcendental Deduction, true to its name as borrowed from legal language is simply a brief outline, so we should *expect* the substantial arguments to appear later – as it happens: in the Analytic of Principles.

Just as Henrich claims for the Transcendental Deduction, transcendental philosophy is compatible with any kind of argumentation suitable for justifying a theoretical claim. Typically this will involve both analytic arguments and abductive inferences.

This, I believe is a true description of the actual argumentative structure of the Transcendental Deduction. We should not let ourselves be distracted by the fact that Kant sometimes seems to overstate his case by claiming that the results of the Transcendental Deduction are *proved* with "apodeictic certainty".

Let us pause at this point to recapitulate the points established so far, and the task facing us in the Transcendental Deduction:

We are investigating propositional experience – empirical knowledge consisting of judgements. The making of such judgements requires that certain conditions be met, and such judgements can be classified by means of a system of forms of judgement.

The aim of the Transcendental Deduction is to give an outline of a theory designed to show (a) that the table of concepts of objects considered as subjects of the forms of judgements are identical to the total number of Pure Concepts, and (b) that such Pure Concepts are applicable to objects of experience – i.e. that they have empirical validity.

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[196] Guyer 1987, p. 79

It is essential to realise that the Transcendental Deduction gives no more than the *outline* of such a theory. It is little more than a plan of action.

The conclusions made about the structure of empirical judgements will come into play in the treatment of the subsequent parts of the *Critique*, specifically the Analogies of Experience.

b) Synthesis and the "unities of self-consciousness"

Before we can proceed to the proper interpretation of the Transcendental Deduction, we shall need to deal with one of thorniest problems in making sense of the core doctrines of the *Critique:* Kant's notion of synthesis. This notion figures importantly in both versions of the Transcendental Deduction, and if nothing else it seems clear that Kant took the appeal to synthesis to be a vital step in the argument of the deduction. But it is unclear to say the least whether it can actually do the logical work that it is supposed to.

Synthesis and Transcendental Psychology

Kant defines synthesis as the act or process by which disparate elements of cognitions are brought together into some kind of cognitive unit:

> By **synthesis** in the most general sense, however, I understand the action of putting different representations together with each other and comprehending their manifoldness in one cognition.[197]

It would seem hard to think otherwise than that an "action of putting different representations together" must be some form of actual mental *process,* be it conscious or unconscious, deliberate or automatic. Patricia Kitcher, in her introduction to the Hackett edition of the *Critique* thinks that the notion of 'synthesis' should be understood as the more modern concept of 'information processing'

> Kant did not refer to the "processing" of information, but to the combining or **"synthesizing"** of the contents of [198]{re}presentations. In this case, however, the

[197] A77/B103

[198] The Hackett edition of the *Critique* consistently has 'presentation' for Kant's 'Vorstellung' I have changed it to keep it in line with the terminology employed in this thesis.

> contemporary equivalent of "processing information" for "synthesizing [the contents of][199] {re}presentations," captures his meaning very well.[200]

If Kitcher is right in this, and I believe that she is, it would seem that 'synthesis' is a *psychological*[201] notion, rather than a logical or epistemological one, and it is unclear how this notion relates to other explicitly logical or epistemological concerns of Kant's. This has led different commentators to take radically different stances towards Kant's doctrines of synthesis.

At one end of the scale, we find P.F. Strawson, who thinks that Kant is indeed caught up in psychological considerations, but that this is a grave mistake on Kant's part. He says of the Transcendental Deduction:

> [I]t is also an essay in the imaginary subject of transcendental psychology […] The theory of synthesis, like any essay in transcendental psychology, is exposed to the *ad hominem* objection that we can claim no empirical knowledge of its truth; for this would be to claim empirical knowledge of the occurrence of that which is held to be the antecedent condition of empirical knowledge.[202]

Whatever stance we might in the end take towards transcendental psychology as such, Strawson's objection to it here does not seem particularly well-founded. Claiming empirical knowledge of the occurrence of what is an antecedent condition of knowledge is no different from claiming empirical knowledge of whatever is deemed to be a necessary condition of something whose existence is empirically known. For instance: surely an antecedent and necessary condition of empirical knowledge is the possession of some form of cognitive mechanism (i.e. *a brain* in the human case, and there may be no other cases), so from the empirical fact that some epistemic agent has some empirical knowledge, we can draw the conclusion that an agent has some form of cognitive mechanism, i.e. a brain. So the occurrence or existence of that which is held to be an antecedent condition of empirical knowledge is indeed empirically knowable. What is arguably *not* empirical is the premise that possession of a brain is a condition for empirical knowledge, but *that* was not the target for Strawson's objection.

There are other grave problems with the notion of synthesis though, some of which do indeed render understandable Strawson's "hope of by-passing the doctrine of

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199 Kitcher's insertion

200 Kitcher 1996, p. xliv

201 I take 'psychological' here to be opposed to 'rational'.

202 Strawson 1966, p. 32

synthesis altogether".[203] One of the problems with psychological notions is that they will tend to describe solely *subjective* states, from which one cannot automatically draw any conclusions with *objective* validity. In essence, from a claim that such and such a mental process is taking place, one can draw no conclusion as to how things are in the world, or at least not without further argument. Frege was acutely aware of this, and in his *Foundations of Arithmetic* he expressed the methodological admonition "always to separate sharply the psychological from the logical, the subjective from the objective…".[204] Strawson's categorical dismissal of any reliance on psychological notions is very likely influenced by this principle from Frege.

At the other end of the scale we find Patricia Kitcher, who, in eloquent defiance of Strawson, *names* her book after the Transcendental Psychology that Strawson termed "an imaginary subject" and thinks that what can be found of transcendental psychology is not only historically important, but that in neglecting it "scholars lose the opportunity to contribute to current debates in philosophy, psychology, and cognitive science".[205]

One challenge that faces Kitcher or anyone else who wants to defend the value of transcendental psychology is to *define* it – to show how transcendental psychology (which is a term Kant never uses) is distinguished from empirical psychology on the one hand and from what Kant refers to as *'rational'* psychology on the other.

Empirical psychology is roughly what we mean by 'psychology' in today's terms and falls within the domain of cognitive science. 'Transcendental' is supposed to denote what has to do with "our mode of cognition of objects insofar as this is to be possible *a priori*"[206] so that would exclude empirical psychology by definition, as anything empirical is by definition *a posteriori*.

On the other hand, Kant claims of *rational* psychology (which *is* a priori), that its "sole text" is "**I think**"[207] and its most important feature is its paucity of valid conclusions. Since Kant argues forcefully for the need to curb the pretensions of rational psychology, it had better not turn out that transcendental psychology just is rational psychology under another name.

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203 Op. cit. p. 96

204 Frege 1968, p. x

205 Kitcher 1990, p. 29

206 B25

207 A343/B401

However, it would seem that there is a reasonably straightforward way to define transcendental psychology. Presumably empirical psychology tells us about mental or cognitive processes, the knowledge of which is established by normal inductive reasoning based on available evidence of human behaviour. This proceeds largely by inference to best explanation: "If we possess psychological faculty A, we would be able to have cognitive ability B. We have cognitive ability B, therefore the hypothesis that we possess psychological faculty A is supported." This is basically to claim that psychological faculty A is *sufficient*, given certain background assumptions, for the possession of cognitive ability B. The inference will have something like the following form:

B if A,
B,
Therefore A is supported

Note that this is not strictly logically valid, so there is no *demonstration* or *proof* of the reality of psychological faculty A. The inferences here are *straightforwardly* empirical.

Now, if we suppose in contrast to this that it is possible to establish that some psychological faculty or process is *necessary* for the very possibility of empirical knowledge, then the actuality of these processes would be presupposed by the existence of any empirical knowledge at all; hence their existence could be logically *deduced* from the (admittedly empirical) premise that we have some empirical knowledge. Thus, such arguments would claim some form of *necessity*, and the reasoning required to establish those claims would seem to fall precisely within the field of what could then appropriately be termed "transcendental psychology".

Say we wanted to give a transcendental psychological argument that some mental process P is necessary for empirical knowledge (K). The transcendental psychological argument would then be of the following form:

K only if P,
K,
Therefore P

Now, this is clearly a valid form of argument, and if transcendental psychology were able to establish premises of the form 'K only if P', then this would be a promising line of investigation. So at least the *concept* of a transcendental psychology seems to make

sense. But unfortunately, establishing premises of this form is by no means unproblematic. The problem is that in order to be able to argue that some mental or cognitive process is *necessary* for some empirical knowledge, i.e. to argue that K *only* if P, then the characterisation of P is likely to have to be quite non-specific; i.e. of the order of claiming rather trivially that some mental activity is necessary for possession of empirical knowledge. Conversely if P is given a highly specific characterisation, then it is feasible to argue that *if* this mental or cognitive process takes place, *then* some empirical knowledge is possible, but the truth of *that* does not entail that *only* if this mental or cognitive process takes place is that empirical knowledge possible. One could of course nevertheless argue for the actuality of the mental process P by inference to best explanation or by ordinary inductive grounds, but that would again amount to doing *empirical* psychology. Transcendental psychology would then be in danger of either being vacuous or at least to have too little content, or else to collapse into empirical psychology.

We shall see that Kant's reliance on claims about synthesis, which can plausibly be cast as transcendental psychological arguments, is caught in this dilemma in that his doctrine of synthesis is neither necessary nor sufficient for establishing the premises he ultimately needs.

Empirical Transcendental Psychology

Though the dilemma presented in the last section does indeed present a serious challenge to Kant, it would be unfair to Kitcher not to acknowledge that her re-interpretation of the Kantian project offers a way out of the dilemma – albeit it one that comes at quite a considerable price.

The problem was to find a conception of transcendental psychology that could have a valid claim to being *a priori* hence in some sense *necessary*, while at the same time having enough content to yield interesting conclusions. One way of resolving this is cheerfully to embrace the collapse into empirical psychology:

– Of course, one might argue, our knowledge of transcendental psychology, our knowledge of the various kinds of synthesis, is empirical – gleaned inductively from observation of human behaviour – what else could it be? It is the *content of the beliefs* resulting from these syntheses that is *a priori*, hence justifying the title of "transcendental" to this branch of empirical psychology. Recall that 'transcendental' denotes what has to do with 'our mode of cognition of objects insofar as this is to be

possible *a priori."*[208] So a transcendental thesis concerns *a priori* cognition of objects, but need not therefore itself be *a priori.* Such an empirical transcendental psychology could for instance conclude that our minds are so constituted that we always think of the world in terms of the Categories. That is why all human experience conform to the categories and *eo ipso* why the Categories are necessary throughout human experience. This makes the necessity of the Categories (and of the Principles that are alleged to arise from their application) a *subjective* necessity. It is a consequence of contingent facts about our minds. Such a conception of empirical transcendental psychology could arguably be seen as a continuation of Hume's project.

If true, it would indeed constitute an explanation of *why* and *how* pure concepts are actually applied in human experience. However, this view faces grave intrinsic problems, and it is quite clear that this was *not* how Kant conceived of his answer to the Key to Metaphysics.

The problem with this view is that rather than having provided a *justification* – an explanation of the validity – of the rational application of pure concepts, it has given a *causal* explanation of the *imposition* of pure concepts. If our use of pure concepts and pure principles is correctly explained by reference to empirical transcendental psychology, that means that we *cannot but* think of the world e.g. in terms of substances and attributes and in terms of causal necessities. Empirical Transcendental Psychology could in principle explain how pure concepts spring from necessary preconditions for empirical knowledge, namely by arguing for instance that in order to apply the concepts we do, we have to believe that the world consists of discrete and solid physical objects. What is unavailable to Empirical Transcendental Psychology is the claim that these preconditions are in some way *constitutive.* The necessity of these preconditions would have to be regarded as *psychological* – it would be sufficient that we *believed* that the world conformed to the categories.

If this is a psychological necessity we would think of the world in those terms, *no matter how the world might be.* Since it is psychologically necessary for us to think of the world in those terms, the beliefs arising from purely from those terms do not in any sense "track" how the world actually is. Hence we cannot conclude from the subjective necessity of these beliefs to any corresponding *facts.* This immediately gives rise to sceptical worries: if my belief in causal laws, or indeed of mind-independent objects at all is *merely* a result of my psychological constitution, then it would seem eminently possible

[208] B25, see p. 108

that those beliefs might be false. Maybe I cannot help thinking of the world as consisting of mind-independent objects, but I *would* think that, wouldn't I, if that was the way my mind worked, independently of any objective state of affairs. This illustrates the whiff of paradox that emanates from any claims of empirical transcendental psychology: if I am given reasons to believe that some belief I hold is but a result of a psychological necessity, then that immediately gives me grounds to *doubt* that belief, since it follows that I *would* hold the belief no matter what the world is like, so for all I know, the belief might be false. One natural retreat then, is to become an anti-realist about the content of such pure beliefs and say that this doubt is really empty, the question of facts corresponding to these pure beliefs should never really arise. Since we cannot but think in these terms, it makes no sense to question their correctness. These beliefs have subjective necessity and that ought to be the end of the debate.

But this is clearly a deeply unsatisfying position. Though it may be psychologically impossible e.g. really to disbelieve in the existence of the external world, surely that hasn't stopped people from worrying about the justification of that belief, as is amply evidenced by the history of philosophy. It may be impossible to disbelieve, but it is certainly possible to *doubt.*

It might of course turn out that we can in the end give no rational justification for the validity of the pure concepts. If that were to be the case, then we should have to settle with the causal explanation of their imposition on experience, but since this would be so clearly unsatisfying, we should at least investigate whether there are any more attractive alternatives; and this is precisely what I think that Kant's *Critique* shows us.[209]

Now, Kant's doctrine of "Transcendental Idealism" and his claims about the invalidity of inferring from truths about appearances to claims about "things in themselves", *sounds* very much like an anti-realist response to the problems of psychological necessity, so it is not difficult to see the attractions of such a reading of the Kantian project. It should, however, be resisted. In summing up the results of the Transcendental Deduction Kant *contrasts* the view he has just presented with any attempt at explaining the Categories as "subjective predispositions for thinking,

[209] See also p. 148

> implanted in us along with our existence by our author in such a way that their use would agree exactly with the laws of nature along which experience runs.[210]

And he notes the sceptical worries attaching to such a view:

> [I]n such a case the categories would lack the **necessity** that is essential to the concept. For e.g., the concept of cause, which asserts the necessity of a consequent under a presupposed condition, would be false if it rested only on a subjective necessity, arbitrarily implanted in us, of combining certain empirical representations according to such a rule of relation. I would not be able to say that the effect is combined with the cause in the object (i.e. necessarily), but only that I am so constituted that I cannot think of this representation otherwise than as so connected, which is precisely what the skeptic wishes most, for then all our insight through the supposed objective validity of our judgments is nothing but sheer illusion…[211]

We are clearly justified in not treating empirical transcendental psychology as a correct interpretation of Kant's project, and only if we fail to meet Kant's aims of *validating* the pure concepts should we fall back on such an interpretation.

Synthesis as transcendental justification

Paul Guyer presents a third alternative in stances towards the notion of pure synthesis in claiming that it should really be taken as some kind of metaphor: The various functions of synthesis should not be seen as stages of a temporal process but rather as the relations between premises and conclusion in a kind of possible argument whereby claims to knowledge could be justified.

> What Kant's argument requires, indeed what the use of his own distinction between syntheses of apprehension and recognition should allow us to see, is not the transmutation of a nontemporal manifold into a temporal one by a mysterious act of a transcendental self, but just the transmutation of mere beliefs into claims to knowledge. The interpretation of our present manifold must therefore not be thought of as a psychological *event* in which a sense of its succession is first generated, but as something more akin to the kind of *argument* – that, of course, will often remain unstated – by which our *judgments* about the temporal order of even subjective states of affairs, even mere representations, can be confirmed.[212]

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210 B167

211 B168

212 Guyer 1987, p. 304

My own view is that Kant's appeals to synthesis are largely redundant in his arguments. What *is* needed as premises for some vital arguments are claims to formal aspects of experience that is supposed to be the *result* of various syntheses, but not only is the appeal to synthesis insufficient to establish the formal claims, it is also unnecessary.

But this is anticipating the discussion – we should first examine how the notion of synthesis figures in the Transcendental Deduction. And to do that, we need to recapitulate what the Transcendental Deduction ought to establish: We have seen that we employ a number of pure Concepts like 'self', 'substance' and 'causality' whose representance cannot be explained on the same model as that of empirical concepts. These are *the Categories as analytically defined*. Further we have shown that we can form concepts of objects *qua* subjects of judgements of specific forms. These are *the Categories as synthetically defined*. Clearly, all objects that are subjects of empirical judgements are subject also to the Categories as synthetically defined. So the Categories as synthetically defined necessarily apply to all objects of empirical judgements. If it be possible to show that the Categories as synthetically defined are identical to the Categories as analytically defined, then it is shown that the Categories necessarily apply to all objects of empirical judgements. But that is not yet sufficient: We cognise objects also through mere intuition, which is defined as one species of *objective representations*. So, the Transcendental Deduction needs to give an outline of how to establish first that also objects *qua* objects of mere intuitions are subject to the Categories as synthetically defined, second that the Categories as synthetically defined are identical to the Categories as analytically defined. This would constitute an answer to the problem of the representance of the originally listed pure concepts. Of these two the first claim is given a relatively full treatment, and is supposed to be argued for conclusively in the Transcendental Deduction itself, whereas the second claim is explicitly only given a preparatory treatment. And the notion of synthesis is drawn upon chiefly to establish the first claim: that the Categories as synthetically defined also apply to intuitions.

Though the structure of the argument is markedly different in the two versions of the Transcendental Deduction, and the notion of synthesis is more predominant in the 1st edition version; its logical role is largely the same in the two versions.

In the first edition of the Transcendental Deduction Kant refers to "a threefold synthesis,"

> which is necessarily found in all cognition: that, namely, of the **apprehension** of the representations, as modifications of the mind in intuition; of the **reproduction** of them in the imagination; and of their **recognition** in the concept.[213]

Kant argues that synthesis is required for three different epistemic phenomena, namely *intuition*, *imagination* and *subsumption of representations under concepts.* The syntheses needed for these three phenomena are termed synthesis of *apprehension*, *reproduction* and *recognition* respectively. A plausible way to read this is as a claim that some kind of mental information processing must take place for each of these phenomena to be possible.

It is not too difficult to make a case for Kant's claims with respect to intuition and subsumption but the case of imagination is less straightforward.

That some form of information processing must take place for intuition – *perception* – to occur, seems straightforward enough: The mere fact that inputs from different sensory modalities all go into making our perceptual representation of one particular object indicates that *some* form of processing; some form of bringing together different sensory states is necessarily happening when we perceive something as an object. When perceiving e.g. a galloping horse, my representation of it includes both the sight of it, the sound of its hooves on the ground and quite plausibly its smell; and if I touch it, the tactile sensations of a rough, hairy hide also go into my complete perceptual representations of the horse; they are all taken as *belonging together* in the representation of that object.

As for *subsumption*, Kant seems further to be claiming that in any application of a concept to material given in sensibility – any cognition – there is always an implicit possible or actual *re*-cognition. With the cognition of something *as* being of a certain kind there is always the possibility of cognising the "same again". If things were never recognisably similar, if we could never be aware of either having encountered that kind of thing before or the possibility of encountering that kind of thing again, the very notion of *generality*, the very notion of a concept becomes meaningless.

Kant illustrates this in the context of *counting*

> If, in counting, I forget that the units that now hover before my senses were successively added to each other by me, then I would not cognize the generation of the multitude through this successive addition of one to the other, and consequently I would not cognize

[213] A98

> the number; for this concept consists solely in the consciousness of this unity of the synthesis.
>
> The word "concept" itself could already lead us to this remark. For it is this **one** consciousness that unifies the manifold that has been successively intuited, and then also reproduced, into one representation.[214]

But though especially true in counting, where the awareness of just having applied the previous member of the series of instances of the concept of 'number' is essential, it would seem equally that *any* use of a concept implies the possibility of "*same again*"-cognition, i.e. *re*cognition, and this seems strongly to suggest that in applying any concept, some sort of calibration against stored information derived from previous applications (or at least storing of information for use in future applications) is going on. Much is murky in Kant's arguments in the 1st edition Deduction, but he seems at least to be driving at points similar to those adduced here. For instance, in a rather cryptic passage about "the transcendental unity of apperception" he implies that "the synthesis of all appearances in accordance with concepts" is a synthesis "in accordance with rules that … make them *necessarily reproducible*".[215]

But reproduction is supposed to be the kind of synthesis necessary for *imagination*, not for *subsumption*. Furthermore, the kind of examples Kant gives to make the case for the synthesis of reproduction in imagination seem to point equally to the need for recognition in subsumption:

> If cinnabar were now red, now black, now light, now heavy, if a human being were now changed into this animal shape, now into that one, if on the longest day the land were now covered with fruits, now with ice and snow, then my empirical imagination would never even get the opportunity to think of heavy cinnabar on the occasion of the representation of the color red; or if a certain word were attributed now to this thing, now to that, or if one and the same thing were sometimes called this, sometimes that, without the governance of a certain rule to which the appearances are already subjected in themselves, then no empirical synthesis of reproduction could take place.[216]

If there were no unchanging sensible property by which we could *recognise* a kind of thing as being subsumable under the general concept of that kind of thing, then the very

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214 A103

215 A108 (my italics)

216 A100–101

possibility of applying that concept would be absent. So, recognition is necessary for the very possibility of applying concepts in the first place.

But, as mentioned this quotation is taken from Kant's discussion of the synthesis of apprehension in imagination, *not* of the synthesis of recognition in subsumption. So, it would seem that the "threefold" synthesis is not quite as neatly trichotomised as one might first think, but we shall see that Kant claims certain interdependencies and relations between the three "folds" that can go some way to explain this. A more important worry is that it is hard to see how any of this ties in with the Categories being defined as concepts of objects considered as subjects of empirical judgements. We were told in the Clue that the table of Categories correspond perfectly to the table of judgements, so we should reasonably expect now in the deduction of the validity of the Categories to find some mention of forms of judgement, but the 1st edition Deduction makes no mention of forms of judgement at all. Instead the focus seems to be on *synthesis.*

To make sense of this, it would seem that we need to make explicit some direct link between the terms of the argument in the Transcendental Deduction and our expectations from the Clue; and it does seem that Kant at least implicitly gives the material for finding such a link. Recall that *synthesis* was defined as "the action of putting different representations together with each other and comprehending their manifoldness in one cognition" (see p. 103). In the Clue, Kant claimed that *judgements* are "functions of unity among our representations"[217] and that "[b]y a function […] I understand the unity of the action of ordering different representations under a common one".[218] Now, "putting different representations together and comprehending their manifoldness in one cognition" can be little else than the "unity of ordering different representations under a common one", which then entails that *judging* just is a case of *synthesis,* or perhaps better: *synthesising.* Further, since "understanding can make no other use of […] concepts than that of judging by means of them",[219] it would seem that the "synthesis of recognition in the concept" just is another characterisation of judgement. The forms of empirical judgements must be just the ways in which this synthesis can be performed. By insisting on the need for a synthesis of recognition to enable subsumption, Kant is doing little more than reiterating the need for a *combining* of concepts in order to make judgements, and that there are just so many ways concepts can be combined in judgements – judgements have determinate *structure,* they are analysable

217 A69/B94

218 A68/B93

219 Ibid.

in terms of certain formal notions; and this he can now claim is due to their being the *results* of certain kinds of *syntheses.*

Presumably, Kant's motivation for bringing in the notion of synthesis is so that he can link the formal aspects of judgements (now under the title of recognition in the concept) with the formal aspects of intuitions, thus to show that categories apply also to objects of mere intuition. If the conformity of empirical judgements to categories is due to the judgements' being the result of synthesis, and synthesis is also necessary for intuitions, then we begin to see a link between the formal aspects of judgements and the formal aspects of intuitions. And the way this link is supposed to be established seems to be by way of appeal to the mysterious synthesis of imagination.

The tacit premise underlying the claims in the 1st edition Transcendental Deduction seems to be that it is *one and the same* synthesis that is in operation in all three cases of intuition, imagination and subsumption, and that the functions of this synthesis conforms exactly to the Categories. As we shall see, the problem with this argument is that it rests on a subtle equivocation in the idea of *the same synthesis* which renders the argument either invalid or unsound. I take it that sameness of synthesis can mean one of two things: Either it means that it is the same *faculty* or mechanism that is responsible for the combination of representations in all three cases (sameness of faculty), or else it means that representations are combined *in the same ways* in all three cases (sameness of combinations). Kant's claims about the "threefold synthesis" seem to be plausible only if taken to imply sameness of faculty, but unfortunately, in order to yield the conclusions about conforming to categories they must be taken to imply sameness of combinations.

The three kinds of synthesis are not as one might first assume co-ordinated *analysanda* of synthesis in general. Rather the claim is that the syntheses both in intuition and in subsumption depend essentially on the synthesis in imagination:

> We therefore have a pure imagination, as a fundamental faculty of the human soul, that grounds all cognition *a priori.* By its means we bring into combination the manifold of intuition on the one side and the condition of the necessary unity of apperception on the other. Both extremes, namely sensibility and understanding, must necessarily be connected by means of this transcendental function of the imagination…[220]

The basic idea must be that we have *one* faculty of synthesis. In general, this can be referred to as "*pure imagination*, … a fundamental faculty of the human soul". When this pure imagination is applied in sensibility to the manifold of intuition it is called

[220] A124

"synthesis of apprehension" and when it is applied to concepts in subsumption it is called "synthesis of recognition".

Now, we have just seen that there are reasons why we should assume that the synthesis in subsumption is governed by the Categories, and Kant needs to show that this is the case also for the synthesis in intuition. One strategy would be to show that the pure imagination *as such* is governed by the Categories. If this could be shown, then it would indeed follow that intuitions conform to the Categories, as the synthesis in intuition *just is* pure imagination applied in intuition. Kant does indeed claim that the synthesis in imagination is governed by the Categories:

> **The unity of apperception in relation to the synthesis of the imagination** is the **understanding**, and this very same unity, in relation to the **transcendental synthesis** of the imagination, is the **pure understanding.** In the understanding there are therefore pure *a priori* cognitions that contain the necessary unity of the pure synthesis of the imagination in regard to all possible appearances. These, however, are the **categories,** i.e., pure concepts of the understanding…[221]

But no arguments are given for why the "rules" for the synthesis of imagination should be just the categories. Why should imagination be bound by forms of empirical judgements? Allison takes due notice of this problem:

> The second and perhaps most problematic aspect of Kant's doctrine is the claim that the imaginative synthesis is governed by the categories. Why, after all, should the imaginative activity have anything to do with the logical functions of judgment? I take this to be the most fundamental question raised by Kant's analysis. Only by establishing such a connection can Kant demonstrate the connection between the categories and human sensibility that is needed for the explanation of the possibility of synthetic a priori judgments. The issue is thus central to the whole program of the *Critique*. Unfortunately, Kant seems to beg rather than to answer this question. Instead of providing an argument, he simply claims dogmatically that the imaginative synthesis is an expression of the spontaneity of thought, that it determines inner sense a priori in respect of its form, and that this determination is in accord with the unity of apperception.[222]

That the categories are the rules for the synthesis of recognition in subsumption follows analytically from the definition of categories as concepts of objects of empirical judgements, but this does not yet entail that the synthesis of pure imagination must

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221 A119

222 Allison 1983, p. 161

always and only proceed by just *those* rules. This then must be supposed to be established via the claim that it is just *the same* synthesis that operates in all three cases. But what is the argument for that? We have seen that there are good reasons to accept that *some* synthesis must take place both in the case of intuition and in the case of subsumption, and of course we can define the term 'pure imagination' as the capacity to perform such syntheses in general. But our only grip on this "power" of synthesis is through the quite reasonable claim that *some* combining, *some* information processing, must take place both for intuition and subsumption. This processing *could* be always done by the same faculty – the same *processor*, or different processors could used for different kinds of combinations or else a new processor could be procured for each instance of a need for processing; and in each of these cases would the need for information processing be met. Only on a purely trivial reading of "synthesis" as *a capacity for synthesising* are we justified in claiming that it is *the same synthesis* that operates in all cases of intuition and subsumption. So the only tenable claim that can be made to sameness of synthesis of intuition and subsumption is as a sameness of faculty, and at that only on a purely vacuous reading of "faculty". Furthermore, even if we were to allow by some kind of inference to the best explanation and a principle of methodological simplicity that it was the same *mechanism* – the same processor – that performed the synthesis it would still not entail that the synthesis proceed by the same formal rules (i.e. the Categories) both in the case of intuition and of subsumption, hence that intuitions and judgements have the same formal structure. Consider a more mundane analogue: from the fact that two kinds of things are e.g. *made by hand,* it does not follow that they possess any structural similarity apart from the purely vacuous claim that they are both *hand-made.* Similarly with intuitions and empirical judgements: while they are both *synthetic unities* since they both require *synthesis,* that does not entail that the same *functions* of synthesis – the same rules of combination – are applied in both cases. The most that could be claimed is that in virtue of relying on synthesis – on some sort of combination of elements – they must both have some kind of formal *structure;* they cannot be un-analysable simples.

So the only tenable claim to sameness of synthesis of intuitions and subsumption turns out not to be *sufficient* to establish that intuitions conform to the categories.

On the other hand, if it could be shown on other grounds that empirical judgements and intuitions do indeed show structural identity, and that these structural features correspond to the categories, then that would in itself be sufficient to show that categories apply to intuitions *but it would not entail that the same mechanism was responsible for*

the structural identity. Artefacts may have precisely the same form whether they are assembled by hand or by a machine. So the appeal to sameness of synthesis is not *necessary* for a sameness of formal structure of intuition and subsumption.

Thus, I think we have finally reached a justification for following Strawson in by-passing the doctrine of synthesis in my reading of the Transcendental Deduction. Instead we shall look for independent arguments to establish the structural identity of intuitions and subsumption.

c) The argumentative structure of the Transcendental Deduction

The Transcendental Deduction is without doubt the most complex and difficult part of the *Critique*, a fact that Kant himself seems to have been acutely aware of,[223] and its interpretation has generated endless commentary and debate, and continues to do so.

Sebastian Gardner divides the possible interpretations of the Transcendental Deduction along two main lines:

> The dominant line of interpretation finds in the Deduction a progressive, anti-skeptical argument, from the incontrovertible premise that we have experience or are self-conscious to the strong conclusion that we have experience of an objective world. The minority view is that the Deduction is concerned with the conditions of empirical knowledge, not those of self-consciousness: its argument is regressive, and effective against empiricism but not skepticism.[224]

According to this division, my own reading falls squarely in the minority camp. As I have been arguing, Kant thinks there is no mystery to our use of ordinary empirical concepts, and as for the existence of external objects, the target of most sceptics, he states in the Prolegomena:

> My idealism concerns not the existence of things (the doubting of which, however, constitutes idealism in the ordinary sense), since it never came into my head to doubt it[225]

If sceptical doubts never entered Kant's thoughts, it would be odd to find him devoting the central part of the *Critique* to refuting sceptical arguments. The target of the Deduction is to explain the use of *pure* concepts, and our legitimate use of empirical concepts are properly in this context taken as a given.

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223 See p. 21

224 Gardner 1999, p. 141

225 *Proleg.* p. 293

Strawson[226] gives a clear example of reading anti-sceptical arguments into the Transcendental Deduction. He wastes little time on Kant's statements about the links between the table of judgement and the table of categories and the role of the categories as concepts of objects as subjects of judgements. Instead he focuses on some of Kant's remarks about conditions for unity of consciousness and draws conclusions from this to the necessity of an experience of a world consisting of objects conforming to spatio-temporal regularity and connectedness. One problem with this line of argument is that it can at best show that we must have an experience *as* of a world of external objects etc., not that this experience is veridical.

Most commentators seem to want to salvage a particular line of argument from the stated version of the Transcendental Deduction. The starting point is that human intuition is sensible – then Kant's claim that space and time are *a priori* forms of human intuition is taken to entail or justify a claim that human experience is necessarily interpretable as being of an essentially *unitary* spatio-temporal frame-work.

Few commentators seem to have taken seriously Kant's claim in the *Foundations* that the validity of the categories could be argued from an analysis of the forms of empirical judgements. But that is what I intend to pursue in the following.

The two conclusions of the Deduction[227]

Kant presents his Transcendental Deduction of the Pure Concepts of Understanding as a proof of their objective validity, i.e. a justification of the claim that the Pure Concepts of Understanding – the Categories – can be validly applied to all objects of experience. Given this, one would expect the Deduction to end with a concluding passage saying in effect: "Therefore the Categories validly apply to all objects of experience." – or something similar.

But the Deduction as stated in the second edition of the Critique of Pure Reason presents a persistent puzzle with regards to these expectations: A *prima facie* concluding remark, very similar to the one adduced above, occurs in §20:

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226 Strawson 1966, pp. 72–117

227 Since the first draft of this section was written, Markku Leppäkoski of the University of Stockholm has published an article defending an almost identical conclusion. See Leppäkoski 1998.

> All sensible intuitions stand under the categories, as conditions under which alone their manifold can come together in one consciousness.[228]

And then one might expect Kant to end the Deduction, but in the next paragraph he states that he has made only a "beginning of a **deduction** of the pure concepts of the understanding."[229] and then goes on for another six paragraphs before he again seems to reach a conclusion in §26:

> …all possible perceptions, hence everything that can ever reach empirical consciousness, i.e., all appearances of nature, as far as their combination is concerned, stand under the categories…[230]

Let us label these the First and Second Conclusion respectively. Now, the puzzle is: Why does Kant produce these two very similar Conclusions and what is the relation between them?

According to Henry Allison most interpretations have tried to read this division of the second edition "in terms of a model borrowed from the First Edition Deduction… [as] distinctions between an 'objective' and 'subjective' deduction and between the proofs 'from above' and 'from below'"[231] Further, he claims, following an article by Dieter Henrich,[232] that these approaches cannot succeed, and that any successful interpretation of the Deduction must make sense of these two distinct conclusions as two steps in a single proof; if one fails to meet this challenge, one fails to make sense of the argumentative structure actually employed by Kant.

While I accept the challenge that any successful interpretation of the Deduction must make sense of the fact that Kant draws these two distinct Conclusions, I reject both the traditional strategies *and* Allison's/Henrich's "two-steps-of-a-single-proof" suggestion. It seems to me that the changed meaning of the term 'deduction' strongly conditions contemporary readers into expecting a *single* argument with *one* neat conclusion, when Kant is really trying to give the outline of a theory to explain the valid employment of no less than twelve distinct categories subdivided into two divisions and four classes. This

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228 B 143

229 B 144

230 B164–5

231 Allison, p.134

232 Henrich, 1969

should at least alert us to the *possibility* that the "proof-structure" of the Deduction might be considerably more complex than that of a single argument towards a single conclusion.

The proper solution to the puzzle, however, requires us to look quite closely at what Kant says about the table of the categories, what he says about the two relevant paragraphs of the Deduction and at the precise technical meaning of some of his terminology.

The first clue to solving the puzzle of the two conclusions is found in a paragraph added in the second edition. After presenting the complete table of categories, Kant pauses to make some comments about it in §11. Of interest to us in the present inquiry is his first comment:

> …this table, which contains four classes of concepts of the understanding, can first be split into two divisions, the first of which is concerned with the objects of intuition (pure as well as empirical), the second of which, however, is directed at the existence of these objects (either in relation to each other or to the understanding).
>
> I will call the first class the **mathematical** categories, the second the **dynamical** ones.[233]

At first glance, it might seem hard to see the distinction between being "concerned with the objects of intuition" as against "being directed to their existence", but the key here is the clause that Kant somewhat unfortunately places within brackets: The dynamical categories are directed towards objects insofar as they are *related* to each other or to the understanding, whereas the mathematical categories are directed to objects insofar as they are merely objects of intuition. With slight inaccuracy but considerable clarity, we could say that the mathematical categories concern the mere intuition of objects, while the dynamical categories concern the relations *between* intuitions. Note also that the category of existence only occurs in the second division – the dynamical. Now, according to Kant, the *magnitude* of existence is duration – i.e. persistence throughout some time.[234] So, when Kant talks about existence of objects in relation to each other, it seems that he really has in mind their *persistence*. If we regard intuitions as momentary representations – representations for which passage of time makes no difference to their content – it seems only natural to hold that any cognition as of persistence of objects would have to

[233] B110

[234] B226

be based on some combination of intuitions, and the dynamical categories just are concepts of the logical functions of such combinings.

Now, compare this to Kant's explanation in §26 of the difference between his two conclusions:

> …in the **transcendental deduction** [so far], [the categories'] possibility as *a priori* cognitions of objects of an intuition in general was exhibited (§§ 20, 21). Now the possibility of cognizing *a priori* **through categories** whatever objects **may come before our senses,** not as far as the form of their intuition but rather as far as laws of their combination are concerned, […] is to be explained.[235]

So it seems that the first division of the deduction concerns the form of intuition of objects, whereas the second division concerns the laws of combination of objects or of our intuitions thereof. Recall that the Second Conclusion concerns "all appearances of nature, *as far as their combination is concerned*".

There is thus a strong parallel between the division of the Deduction and the Divisions of the table of categories, and my proposal is that the first division of the Deduction justifies the valid applicability of the first division of categories – the *mathematical*, whereas the second division of the Deduction justifies the valid applicability of the second division – the *dynamical*.[236]

This, however, immediately raises a number of interesting questions: Why do we need a deduction of categories – pure concepts of understanding – to account for the form of intuition of objects? Isn't that supposed to have been accounted for in the Transcendental Aesthetic, where forms of intuition are equated with forms of sensibility?

On the traditional reading of Kant, where the dichotomy between sensibility and understanding is seen to coincide with the distinctions between intuitions and concepts, this becomes incomprehensible. If, however, I am right in claiming that a concept is always involved in any intuition, and given that on Kant's view, by definition, concepts are the work of the understanding, then we immediately see that the understanding is at work also in procuring intuitions as it were; and hence the categories, as *modi operandi* of the understanding, may have employment even prior to judgements. And, we shall see that that is indeed what is claimed in the Transcendental Deduction

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235 B159 (Original italics and emphasis, my underscoring)

236 We should also note that Kant claims a fundamental difference between the "Synthetic Principles" arising from the two divisions in that the *mathematical* principles are said to be *constitutive*, while the *dynamical* principles are merely *regulative* (A179/B221–2). Any interpretation of the TD should attempt to make sense of this claim.

The ground plan of the Transcendental Deduction

As if Kant's exposition was not complicated enough, the first part of the Transcendental Deduction of the Categories turns out not to be concerned with any of the categories at all. This is because one of the Pure Concepts which I listed in section 3.3d) as being among Kant's long-standing points of interest, namely the concept of the self, is really not to be found among the categories, but rather at an even higher point of abstraction as being a condition for the making of *any* kind of judgement, not merely empirical ones. So not only is the Transcendental Deduction of the Pure Categories of Understanding not really a deduction, it is not even solely concerned with the Categories. Nevertheless, it *is* an outline of a theory to account for the empirical validity of the categories, or so I shall claim.

The Transcendental Deduction consists of 13 numbered paragraphs: §§15–27 inclusively (the numbering starts with the Transcendental Aesthetic), which should logically be divided into four distinct sections: three argumentative steps interspersed at one point with a collection of comments and elaborations:

I §§15–18 concerns the identity of the self throughout experience,
II §§19–20 establishes the applicability of the mathematical categories to intuitions, §§21–25 is a digression into a number of comments and elaborations
III §26 shows the applicability of the dynamical categories to objects of experience "with regard to the laws of their combination"

and a final summing-up of the results is given in §27.

5.3 Intuitions and the mathematical categories (step II)

Step I of the Transcendental deduction is concerned chiefly with the concept of the self; and Kant's theory of self-consciousness, self-knowledge and the concept of the self, though profoundly interesting, is not necessary for making the case concerning our knowledge of causal facts, so we shall bypass that discussion here, save for the barest mention of the main structure of the arguments in it. The main claim is that sensibility delivers no more than unconnected, isolated impressions, which to yield knowledge must be connected and combined, and that these combinations must be due to *activities – "syntheses"* of the active mind. Now, as was argued in section 5.2b) any reliance on the notion of synthesis is going to be neither necessary nor sufficient for the aim of showing that all intuitions conform to categories. My aim is to present a reconstruction of the

argument of the Transcendental Deduction, based on Kant's claim that the validity of the Categories could be shown to follow from an analysis of the form of empirical judgements,[237] so I am going to disregard the entire discussion about synthesis, and thus most of step I. The only thing we need from this section, is a distinction Kant makes between the subjective and objective "unity of self-consciousness" towards the end of step I.

His point seems to be that we can and do become aware of a number of correlations among our representations. It is for example true that often when I see the sun, I also feel warmth on the skin of my face; and that whenever I smell diesel I think of the smell of sea-water. The first case is of course due to the fact that the sun is causally responsible both for my seeing it and for heating the skin on my face. The second case is due to my spending many childhood summer holidays aboard a diesel-powered fishing boat. The first correlation is clearly *objective*, and due to circumstances that are true independent of my being aware of them, which I could express by saying, for instance

(7) The sun is hot

The second correlation is due to purely subjective associations that *I* make, but that nobody else would be supposed to make. The latter correlation should therefore properly incline me to express

(8) The smell of diesel makes me think of the sea

rather than

(9) *The diesel smells of sea-water

Even if *I* associate diesel and sea-water, there is no reason why others should do so. In Kant's words:

> One person combines the representation of a certain word with one thing, another with something else; and the unity of consciousness in that which is empirical is not, with regard to what is given, necessarily or universally valid.[238]

[237] See sections 1.4 and 1.5

[238] B140

The point here is just to point out that we *do* distinguish between objectively valid and merely subjective correlations between representations. *How*, or by what warrant is not yet discussed. This point will become important in the passages to follow.

In §19 of the Transcendental Deduction, Kant has concluded his discussion about self-consciousness and turns his attention to "the logical form of judgments". This has strong resonances with the table of judgements and the "logical functions of understanding", so we might reasonably expect to see Kant redeem some of the promissory notes made in the Clue, and these expectations are not left wholly unfulfilled.

a) The objectivity of judgements – §19

The conclusion to be arrived at in §19 is also the title of the paragraph:

> §19 – The logical form of all judgments consist in the objective unity of the apperception of the concepts contained therein[239]

'Apperception' is Kant's term for self-consciousness, so the claim of §19 is in essence that the logical form of a judgement consists in the objective validity of the combination of concepts used in that judgement, but we should look into this in some more detail. Kant starts out §19 with a criticism of the received definition of judgement given by logicians of his day: "[A judgement] is, they say, the representation of a relation between two concepts." But this has the defect that "it is not here determined wherein this **relation** consists."[240] We shall not waste too much time on what might be the case with "logicians" – as logic has progressed so significantly since Kant lived – but we should look at what Kant is presenting as the preferable alternative. He points out that we distinguish between subjective associations of ideas and purportedly objective judgements. If we did not, there should be no principled difference between (8) and (9), but there clearly is such a difference, so we do make such distinctions. When we form a simple judgement, we intend precisely that the relation between the subject concept and the predicate concept have more than mere subjective reality – the essential form of a judgement is precisely to make a claim to *objective validity*.[241] This judgmental relation, Kant says, is

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239 B140

240 B141

241 This holds for analytic, a priori judgements no less than for synthetic, empirical judgements; only that in the case of analytic udgements they cannot fail to be true.

> … a relation that is **objectively valid,** and that is sufficiently distinguished from the relation of these same representations in which there would be only subjective validity, e.g., in accordance with laws of association. In accordance with the latter I could only say "If I carry a body, I feel a pressure of weight," but not "It, the body, **is** heavy," which would be to say that these two representations are combined in the object, i.e., regardless of any difference in the condition of the subject, and are not merely found together in perception…[242]

To judge is precisely to assert a relation that obtains independently of any state of the judging subject – *that* is the logical form of judgement in general. Basically §19 is an analytic argument, it reminds us that we distinguish between mere subjective associations of ideas and correlations that purport to be objectively valid, and that the latter just are *judgements.*

b) Categorisation of Intuitions – §20

The next paragraph is the most crucial one of the entire Transcendental Deduction, and yet, characteristically and infuriatingly, it is the briefest one. In a mere five sentences, the vital first connection between categories and possible cognition is supposed to be established. This is, of course, precisely the first part of the solution to the Key to Metaphysics.

As before, Kant starts out with stating the conclusion to be reached, in the title of the paragraph:

> §20 – All sensible intuitions[243] stand under the categories, as conditions under which alone their manifold can come together in one consciousness[244]

This claim rests heavily on Kant's discussion about synthesis in Step I, but I intend to show that the claim can be established from far less contentious premises.

Let us examine closely the claim made in §20. The categories are said to be necessary conditions for the possibility of the manifold of sensible intuitions coming together in one consciousness. This is *why* all sensible intuitions stand under the

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242 B142

243 The specification of *sensible* intuitions should not be read as a restriction of the discussion to a subset of our intuitions, but rather to signify a distinction to a possible intellectual intuition. Kant seems to hold that it might not be logically inconsistent to suppose e.g. God to have a nonsensible, i.e. intellectual intuition. This plays no substantial part in his argument though, and we may safely ignore it at this stage. *Our* intuitions are one and all sensible – be they *a priori* or *a posteriori.* See B145–6, 148–9

244 B143

categories, and by the same token why all *objects* of sensible intuitions stand under the categories.

Now first, what is the "manifold of sensible intuitions"? This is explained in §17 of Step I, to which Kant refers in his justification of the claim:

> [Cognitions] consist in the determinate relation of given representations to an object. An **object,** however, is that in the concept of which the manifold of a given intuition is **united.**[245]

The manifold of an intuition is united in the concept of an object, and a cognition consists in the determinate relation of a given representation to an object. So, the manifold of an intuition must be that which is represented by an intuition as falling under the concept of an object – it is whatever part of reality that is being represented as the object of an intuition. An object in general is precisely whatever can be represented as a particular instance of a sortal concept.[246]

So the claim of §20 is that categories are necessary conditions for the representation of anything as an object of intuition.

Now, why should that be? Categories are supposed to be concepts of objects being subjects of *judgements* of various forms, why should they also be conditions of representing something as objects of *intuition*?

Kant gives the following reason for this:

> That action of the understanding, however, through which the manifold of given representations (whether they be intuitions or concepts) is brought under an apperception in general, is the logical function of judgments (§19). Therefore all manifold, insofar as it is given in **one** empirical intuition, is **determined** in regard to one of the logical functions for judgment…[247]

Here he is doing little more than just asserting that the forms of judgement are *also* forms of intuition. But again, we may wonder – why? Why should the "action of the understanding" needed to become aware of an object of intuition be identified with the logical function of judgement. Clearly, this premise needs to be argued for.

This is precisely the point where we will see the benefits, and thus reflectively the justification of the dual-faculty view of intuitions, as this will provide the necessary

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245 B137

246 See section 4.1e), p. 86

247 B143

arguments for showing that (some) forms of judgement are also necessarily forms of intuitions.

On the simple view of intuitions, this claim is in grave danger of seeming under-motivated or even completely unjustified. If intuitions are supposed to be the undifferentiated material of sensibility, given prior to and independent of any conceptual subsumption, it is hard to see why Kant should claim that all the material of an intuition is determined by some logical function for judgement. It would of course be possible to read this as a claim that intuitions, insofar as they are to *become* representations of objects by being subjected to judgements, will *then* be determined by some logical function for judgement. But that does not sit happily with the claim Kant actually makes in the passage quoted above. *Prima facie* it seems quite clear that it is already in virtue of being *intuited* that "the manifold" is determined by some logical function for judgement. Otherwise one should expect Kant to say something like 'all manifold insofar as it constitutes the subject of a possible judgement, is determined in regard to one of the logical functions for judgement', but he doesn't.

Better, therefore to look for reasons why intuitions *per se* should be subjects to logical functions for judgement. Kant's first argument for this, is to point out that intuitions have *objective* purport, though his actual statement of this needs some unpacking:

> That action of the understanding, however, through which the manifold of given representations (whether they be intuitions or concepts) is brought under an apperception in general, is the logical function of judgements (§ 19).[248]

By definition, intuitions, as one kind of cognition, refer to *objects*. This entails that in the case of intuitions we can make much the same distinction between objective and subjective validity that we could in the case of judgements. Suppose I intuit a white horse, and that I report this by uttering "Wow, a white horse!" or perhaps "There's a white horse."[249] Now, clearly I want to convey something more than the simultaneous presence in my consciousness of different impressions of equinity (say a visual impression of a largish four-legged figure, a certain equine smell and so on). Clearly my utterance implies an assertion of the presence of an actual horse – a mind-independent object. And

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248 Ibid.

249 In this case, the indefinite article clearly functions as a singular quantifier – my utterance is only successful if there is *one* white horse saliently present to me. Were there more, I might more appropriately have exclaimed "Wow, *some* white horses!"

this is of course not tied in with my *reporting* or *expressing* the intuition, but holds equally in the case of my merely mutely intuiting the beast – we could not say that I *intuited* a horse if there were no horse there for me to intuit.[250] We clearly distinguish between the mere co-presence of a set of impressions in consciousness and the successful intuition of objects as different notions (though it may still be a moot question *how* we are able to do it). If these were not two distinct notions, how could Macbeth even raise his famous question: "Is this a dagger which I see before me?"[251]

But this invoking of objective – subject-independent – states of affairs just is the logical form of judgement in general as expounded in the previous paragraph of the Transcendental Deduction. The objective purport is a necessary criterion of a judgement, as argued in the previous section, otherwise we would not distinguish between subjective *associations* and objective *judgements.* And intuitions too meet this necessary criterion of judgements (though they fail to meet other criteria). Recall further that it is a necessary condition for a basic empirical judgement that its subject be an object of intuition[252] and that an intuition must have at least the same structural complexity as the subject clause of a basic empirical judgement. If therefore there are forms of judgement – logical functions of the understanding in judgement – that necessarily apply to the subject clause of a judgement regarded in abstraction from the rest of the judgement, then there would be forms of judgements that would apply also to mere intuitions. And as we shall see in the next section, there *are* such forms of judgement which apply directly to the subject clause, namely the forms of Quantity and Quality. And from this, Kant's conclusion really follows, namely that all objects of intuition stand under (at least some) categories, namely those of Quantity and Quality.

It is worth examining this in some detail, and not merely in the abstract as above.

c) Quantity of intuitions

Any subject clause in an empirical judgement, and correspondingly any expression of a simple intuition must contain a determiner and a sortal concept. The determiner is needed to specify *which* particular instance or instances of the sortal concept the intuition is *of*, out of a potential multitude. Whatever I intuit, I must either intuit it as *one* "something" or as *several* "somethings". Take equine intuitions – either it is of one horse or of several – *tertium non datur*. Note that the significance of determiner and

250 Though I might of course be under the *illusion* of intuiting a horse.

251 W. Shakespeare, *Macbeth* act II, scene I

252 See section 4.1f), p. 89

sortal concept is tightly connected: only with reference to subsumption under the specific sortal concept of the intuition does the quantitative determination make sense – only in *relation* to a sortal concept does it make sense to ask whether something be a unity or a plurality. Is the pack of cards essentially one or many? – The only sensible answer is to say: One or many *what?* – it is one *pack* and many *cards.* A corollary of this is that in abstraction from the sortal concept by which we intuit any given part of reality it makes *no* sense to enquire into its quantity – it is neither a unity or a plurality *in itself,* but merely in relation to the sortal concept through which we cognise it. Only as they appear conceptualised in judgements are objects subject to the categories of quantity.

Now, I have just claimed that every intuition will be subject to one of two quantitative forms of judgement: unity or plurality, but Kant claims that there are *three* moments under the heading of quantitative forms of judgement, and these two claims do not seem to add up. The anomaly is, however, only apparent. We should note first one of Kant's "nice observations" about the structure of the table of categories from §11

> …each class always has the same number of categories, namely three, which calls for reflection, since otherwise all *a priori* division by means of concepts must be a dichotomy. But here the third category always arises from the combination of the first two in its class.
>
> Thus **allness** (totality) is nothing other than plurality considered as unity…[253]

The fact that some intuitions conform to the third moment is no exception to the fact that all intuitions fall under one of the first two, since the third moment amounts to a *combination* of the first two. I take it that examples of such *totalities* would be a bunch of flowers regarded as a single *bunch* though consisting of a plurality of flowers, or a pack of cards regarded as a single *pack* though consisting of a plurality of cards.[254]

In the Axioms of Intuition, Kant shows how the categories of unity and plurality give rise to the notion of a *unit* and thus to *counting* and notions of magnitude and quantities, thus linking these categories with mathematics and establishing why these categories are termed *mathematical,* but again, that is a discussion which I shall not enter into here.

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[253] B110, underscoring added. *Unity* in this context should be understood as "one-ness", rather than "united-ness".

[254] For some reason, Kant holds that the universal form of judgement corresponds to the category of unity or one-ness. This I must confess I can make no sense of, and I think that here Kant is simply wrong. Surely the singular judgement must correspond to unity, and the universal one to totality.

d) Quality of intuitions

Kant does not discuss this, but it seems to me that as well as being subject to categories of quantity; in virtue of intuitions' being conceptual, objects of mere intuition are also subject to some *qualitative* category. The qualitative forms of judgements are *affirmative, negative* and *"infinite"* judgements. For reasons that will shortly become apparent, I wish to bracket the third moment for the time being, but we shall focus on affirmation and negation. These, it seems, are relevant also to mere intuition, and so also to the analysis of subject clauses in abstraction from the complete judgements containing them. By being subsumed under a concept, an object is in essence having the property represented by that concept *affirmed* of it. Simply by intuiting a horse, I am affirming equinity of that object – namely the horse. Similarly it seems that in intuition I am able to *negate* a property of an object. Say I am visiting a stud farm and have been told that they only rear white horses, but as it turns out they have one black stallion. On seeing the black stallion it seems perfectly possible that I might recognise it *simply* as a non-white horse – thus immediately and intuitively negate the property of whiteness of that horse. Kant terms the categories corresponding to affirmative and negative judgements *reality* and *negation* respectively, but I think we shall get at least as close to understanding these matters by using the terms *presence* and *absence.* By employing a concept affirmatively in an intuition or a judgement, I am asserting the *presence* of that which the concept represents, and conversely by employing a concept negatively, I am asserting the *absence* of that which the concept represents.

Now, to the enigmatic third moment of quality. What could possibly be the combination of affirmation and negation, of presence and absence? [255] Kant claims that this is the "infinite judgement" corresponding to the category of "limitation". These terms seem particularly unhelpful, but the ideas underlying them are reasonably clear. Again, the *Logic*, gives the clearest statement of what Kant is thinking of:

> **§ 22. Quality of Judgments: Affirmative, Negative, Infinite**
>
> As to quality, judgments are either *affirmative, negative,* or *infinite.* In the *affirmative* judgement, the subject is thought under the sphere [i.e. extension] of the predicate; in the *negative* it is posited *outside* the sphere of the latter; and in the *infinite* it is posited in the sphere of a concept which lies outside the sphere of another.

The core idea seems to be the notion of concepts whose extensions lie outside each other – i.e. mutually exclusive concepts, and the "infinite" judgement somehow asserts that

[255] Thanks are due to Jim Hopkins for setting me on the right track with this one.

the subject is subsumable under one such concept. But then Kant goes on to give examples which seem to illustrate quite a different notion, namely the fact that some judgements, while syntactically affirmative, might nevertheless involve a negation, either by having negation explicitly included in the predicate, such as in

(10) The soul is immortal

Or in cases where the definition of a predicate simply is the negation of some other predicate. We might for example take it that 'fresh' simply means 'not decayed', in which case a judgement such as

(11) That apple is fresh

whilst from the point of view of formal logic is affirmative, should be regarded as negative in epistemological and semantic contexts. But neither this notion of mutually exclusive concepts, nor the examples of syntactically affirmative, but semantically negative judgements seem to have much to do with infinity nor limitation.

I do not know what is behind this confusing tangle of ideas, but I think that the valuable strand of thought is the one that can be gleaned from the definition in the *Logic* that was quoted above. The phenomenon of mutually exclusive concepts is clearly one that is not available to a purely syntactic logic, but which nevertheless is important in epistemology. When I judge that an apple is green all over, I have *ipso facto* also judged that it is not red all over. Nothing can simultaneously be both red and green all over, because these concepts are mutually exclusive. This kind of judgement seems also to fit what we were looking for, namely something that could be regarded as a combination of affirmation and negation. By affirming greenness of an apple, by the same token I also negate redness (and of course, blueness, yellowness and so on) of it. It would seem that a better name for the form of judgement would be *exclusive* judgements, and the category should properly be called *exclusion.* In summary then, I claim that we can make sense of three qualitative forms of judgement – affirmative, negative and exclusive – corresponding to three qualitative categories – presence, absence and exclusion.

(All the suggested modifications to the tables of judgements and categories are summarised in appendix 11.1)

e) The first turn of the Key to Metaphysics

I started this thesis with claiming that we stand in need of an explanation of the representance of certain pure concepts that are employed in experience. At this stage we have finally reached the first partial answer to this challenge, though one might be excused for having lost sight of this in the twists and turns of the discussion thus far. So, it would be useful to sum up the investigations so far.

We have noted that in the case of ordinary empirical concepts like 'horse', 'table' and 'apple' we can always demonstrate their validity by pointing out or procuring positive and negative examples of instances of the concepts. *("This* is a horse, *that* is not a horse"). Given certain assumptions about a shared human nature, this method will also often go a long way towards conveying the meaning of such concepts. This is what Kant calls an *empirical deduction.*

But then we find that we have concepts whose validity *cannot* be demonstrated in this way. Take the concepts of *presence* and *absence.* What could serve as a positive example of presence? Well, everything; and as a negative example: nothing. And conversely for absence. So, no amount of examples would serve to convey the meaning of 'presence' and 'absence', since all possible examples would be completely equivalent in terms of presence and absence. No empirical deduction is available for these concepts, and if the concepts of absence and presence are not to be given up as chimeras we need to find some other account for their application to objects.

Then we have seen that we can find such an account by way of the specific *forms* of empirical judgements that we make. 'Presence' is the concept of a property – any property – being affirmed of an object[256], and 'absence' is the concept of a property – any property – being negated of an object. 'Unity' is the concept of an object being the subject of a singular judgement, and so on. Since our access to objects is by intuitions and judgements, and these pure concepts spring from the logical forms of intuitions and judgements, we know that all objects of our experience – anything that can come to be regarded as an object by us – must fall under these concepts. These concepts apply to objects only *mediately,* by way of application to the formal aspects of our knowledge. So, by a long and complex process of conceptual analysis, we bring out what was implicitly contained in the concepts all along, and we also provide an explanation of how they are necessarily valid throughout experience.

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[256] Frege expresses similar ideas in §53 of his *Foundations of Arithmetic.* He characterises 'existence' (which is a variant on Kantian 'reality' and my 'presence' as a "property of concepts", and asserts that we can "make one concept fall under another higher or, so to say *second order* concept." (my italics)

f) The transition to dynamical categories

Having established the first part of his deduction, Kant now pauses for some comments. Parts of these relate to remnants of his forms-of-sensibility model of pure intuition, which I shall disregard here. Others are of more interest, but I shall postpone discussion of them until we have investigated step III of the Deduction – the justification of the dynamical categories. Before doing so, however, I shall pause briefly on Kant's comments on what has been achieved so far, and see why further considerations need be brought in in order to proceed.

This brings us back to the question about the two conclusions of the Transcendental Deduction. Paton, in his *Kant's Metaphysic of Experience,* and Walsh in *Kant's Criticism of Metaphysics* take similar lines in suggesteing that Kant is going from the general to the specific: §20 is a conclusion about intuitions, defined solely as non-intellectual – belonging to *some* form of sensibility, while the conclusion in §26 is drawn from the added premise that the sensibility in question be the specifically *human* form of sensibility, [257] intuiting "a world … of continuing objects set within a unitary spatio-temporal system."[258]. But the idea that we could even consider any form of intuition other than human sensibility, seems to be contradicted by Kant's claim in §17 that we cannot form "the least concept of another possible understanding" – either based on non-sensible intuition or one whose sensibility was not constrained by space or time.[259]

I aim to show that rather than reading the Transcendental Deduction as moving from the general to the specific, reading it as moving from the mathematical categories to the dynamical makes much more sense with regards to the actual text. Let us first look at how Kant comments on the need to progress from the conclusion about categories and intuitions. In §21, "Comment", Kant sums up the discussion thus far, and signals that there is still something left to be done before the deduction is completed:

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257 Paton 1936, p.501, 526

258 Walsh 1975, p. 53

259 B139

> A manifold that is contained in an intuition that I call mine is represented as belonging to the **necessary** unity of self-consciousness through the synthesis of the understanding, and this takes place by means of the category.…In the above proposition, therefore, the beginning of a **deduction** of the pure concepts of the understanding has been made…
>
> In the sequel (§ 26) … the aim of the deduction will first be fully attained.[260]

And if we jump to §26 we find:

> Now the possibility of cognizing *a priori* **through categories** whatever objects **may come before our senses,** not as far as the form of their intuition but rather as far as the laws of their combination are concerned, thus the possibility of as it were prescribing the law [of combination] to nature and even making the latter possible, is to be explained. For if the categories did not serve in this way, it would not become clear why everything that may ever come before our senses must stand under the laws that arise *a priori* from the understanding alone.[261]

As we know where we are supposed to be heading (the complete justification of the table of categories), it is not difficult to explain why the deduction is necessarily incomplete at this stage. So far we have considered only the forms of judgements that apply to the subject clause in abstraction from the rest of its judgement. So, supposing there are forms of judgement and corresponding categories that only make sense as applied to a full judgement with a separable subject and predicate clause, there are still categories whose validity needs to be explained.

Kant rightly thinks that there are indeed such forms of judgements which only makes sense as regards what he terms the *relational* aspects of judgements. It is however less clear that he is correct about precisely *which* aspects these are.

The simplicity of basic empirical judgements

The first of Kant's relational forms of judgements is the *categorical.* This, he claims, concerns the relation between the predicate and the subject in a judgement.[262] Further the categorical form of judgement is supposed to correspond to the category of *substance* and *attribute.* There seems to be a reasonably simple idea behind this: The distinction between subject concepts and predicate concepts in particular empirical judgements, gives rise to the notions of *substances* as "bearers" of attributes. We get the pure idea of

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260 B144

261 B159

262 See A73/B98

attributes that are shareable among objects from predicate concepts that can occur in different judgements, and correspondingly the idea of substances that can have various properties from subject concepts that can occur in different judgements.

There are, however, a number of problems with this view. The first problem is that the substantiality of whatever is the subject of a judgement is cognisable as substance only *within* the context of that individual judgement. We seem to get only the notion of something that appears as subject *within* each individual judgement. Kant, however, is committed to a notion of substance as something which can always *only* be considered as subject, and *never* as predicate:

> Through the category of substance …, if I bring the concept of a body under it, it is determined that its empirical intuition in experience must always be considered as subject, never as mere predicate…[263]

It is hard to see how *this* unconditional distinction could be derived from the distinctions between the subject and predicate concepts in individual judgements. Indeed, in many categorical judgements, the role of subject and predicate are *reversible.* For instance

(12) That apple is a tasty fruit

and

(13) That tasty fruit is an apple

have exactly the same truth conditions, namely that there be an object which is both an apple and a tasty fruit saliently present to the cogniser. Of course, as we have seen, only sortal concepts can occur as subject concepts in judgements, which means that qualitative concepts are such that they can only ever be *predicates.* But what we were after was the converse: what could only ever be a subject. And it is hard to see how the categorical form of judgement could give us *that.*

A second problem is that the metaphysical principles that are supposed to follow from the relational categories are supposed in turn to be essentially connected to conditions of knowledge of *temporal relations*, but there are no obvious implications of

[263] B129

temporality merely in virtue of a judgement being categorical. I will consider these matters more closely in Chapter 7 – on the 1st Analogy of Experience.

A third problem is that the logical form of a simple categorical judgement seems to be no different from the logical form of an intuition. Take the categorical judgement

(14) That horse is white

and compare this to an intuition that could be expressed as

(15) There's a white horse!

The objective conditions for both the categorical judgement and the intuition are precisely the same, namely that an object which is both white and a horse be saliently present to the cogniser. It seems that nothing *more* is required for the making of a categorical judgement over and above what is needed for an intuition, namely that the concepts employed in the judgement be co-instantiated in the object. Making a categorical judgement about an intuited object simply adds to the number of concepts that an object needs to instantiate in order to make the judgement true; but even an intuition can involve more than one concept, as in (15), so there are no principally different conditions for making categorical judgements that do not also apply to mere intuitions. The object must fall under all the concepts involved (and in the case of intuitions, there may be only one), for the intuition or judgement to be true.

I shall not claim to *prove* conclusively that no notion of substance as necessarily subject could be derived from the categorical judgement, though I do think it is impossible so to derive it. Instead, I shall attempt to show that there is a slightly different set of premises from which the notion of substance can be validated: I shall claim that in order to account fully for our actual empirical knowledge, we need to recognise a form of judgmental relations that Kant fails to mention, and that *these* relations do indeed give rise to a pure notion of substance.

It seems to me that in order to derive the results that Kant wants, we need to look at a more complex form of judgement than the categorical one; namely *judgements of change*, or what I term *transformational* judgements. My reasons for holding this view will be treated in much greater detail in Chapter 7 – where it will also be shown that assuming the existence of this form of judgement is necessary and sufficient to account for the derivation of Kant's notion of substance, his analysis of causation, the principle

of the permanence of substance and the temporal character of the schemata. But first we should deal with the final step of the Transcendental Deduction

5.4 Complex judgements and the dynamical categories (step III)

Given that intuitions and simple categorical judgements have principally the same objective conditions; that the object or objects constituting the subject of the judgement instantiate (all) the concepts; simple categorical judgements have no more logical complexity than intuitions. When referring to intuitions in terms of their logical form, we can assume that we are therefore referring also to simple categorical judgements as far as their logical form goes. They all involve objective conditions that can in principle be established by *one* single observation – they need not be taken to apply at more than *one* single point in time. So when in the context of the Transcendental Deduction reference is made to categories of intuitions, or to logical forms of intuitions[264] we can safely assume this to encompass also simple categorical judgements.

Now, though Kant is arguably wrong in holding that the categorical form gives rise to any conditions over and above those deducible for mere intuitions, he is nevertheless quite right in insisting that human empirical knowledge contains judgements that can only be validated by reference to some kind of *combination* or *relation* of intuitions. An obvious example are judgements involving the notion of causation. No object and no event is a cause or effect regarded in isolation – only with respect to *relations* between objects and their persistence and change throughout time does it make sense to talk of causation. To get any grip on essentially relational notions, we clearly need some principles for linking discrete intuitions, which is exactly where the dynamical forms of judgements and their corresponding categories come in.

We have seen that the categories of quantity and quality have validity for all objects of intuition since determination with respect to quantity and quality is a necessary condition for being intuited. Now, if an essential part of experience relied on the *combination* of intuitions, in what could reasonably be termed '*complex* judgements' then there might be additional necessary conditions for the objective validity of so combining intuitions in complex judgements, and these necessary conditions which might give rise to additional categories. Such categories would not necessarily apply to

[264] Sensible forms of intuition – i.e. forms of sensibility might be another matter, but it does not concern any of the arguments made here.

all objects of intuitions, but they would apply to whatever could only be known through complex judgements.

So a natural next step is to investigate whether we have knowledge that we could only have by making complex judgements, and to see whether transcendental conclusions can be drawn from these considerations. This is precisely what Kant does in the final third step of the Transcendental Deduction.

This part of the TD centres on the notion of *laws of combination* (of intuitions). In briefest outline Kant wants to show how transcendentally logical laws of combinations of intuitions give rise to laws of combinations of the *objects* of intuition, and that these again serve as conditions for the *laws of nature.*

"Thick" experience and "weighty" objects.

Before we go into the details of the argument in this section, we must prepare ourselves for some potentially quite confusing aspects of Kant's terminology. One is his use of the term 'perception'[265] which is defined as "representation with consciousness" (see p. 38). Another complication is his use of the term 'experience'. Hitherto in the *Critique*, Kant has been using 'experience' as equivalent to 'empirical cognition',[266] which must include also single, isolated empirical intuitions, but now he seems to introduce a "thicker" notion of experience, namely as "cognition through *connected* conscious representations". Now, 'cognition' is '*objective* conscious representation',[267] so this "thick" experience implies an objective, i.e. mind-independent, *content* to our mental states *as they are connected or "held together" in certain ways* – so the single, isolated intuitions would not qualify as thick experience.

Why is there such a shift in the notion of experience? Kant gives no reason nor forewarning, but merely states suddenly in a sub-clause in §26 that "since experience is cognitions through connected conscious representations…".[268] Whence this new addition to the notion of experience? As Kant gives no reason, there is of course no way to tell, but the most charitable and easiest explanation seems to be that Kant is simply *building up* his notion of experience. The discussion of intuitions hitherto in the TD has taken us part of the way towards giving an explanation of human experience – now we need to

265 Ge. '*Wahrnehmung*'

266 This is explicit at B147

267 See A329/B376

268 B161

add more in order to progress further. It is instructive to pause briefly for a slightly closer look at that which is lacking and that which needs to be added:

The model of intuition we have seen so far, can account for our experiencing several sensations as being *objectively combined,* and thus for our experiencing several properties as being combined *in the object* (of intuition). This gives us grounds for saying that the horse *really is* white – equinity and whiteness *really are* combined in the object. So, we have a theoretical account for our cognition of identifiable objects of intuition – parts of the world really possessing sets of properties. But so far, we only have grounds for regarding these objects as mere momentary collections of properties. We lack resources for the development of a more "weighty" sense of objects – namely (a) objects that *persist* through time, and so can be recognised by us as *re-identifiable* objects, and (b) objects that are more than mere "bundles of properties", but can be seen as somehow *underlying* "bearers" of those properties. I shall attempt to show that these two notions are mutually interdependent, so that conditions for one will *ipso facto* be conditions for the other.

This more weighty sense of 'objects' seems to go hand in hand with the "thicker" notion of experience, so that we can as it were distinguish between the weighty objects of thick experience and the light objects of mere intuition. "Thick" experience clearly goes beyond what has been treated so far in the Transcendental Deduction. Up until now we have considered single intuitions in isolation, whereas now we want to focus on how intuitions can and must be connected and combined in order to make possible this thick kind of experience that we do have – which is to say that we seek to *explain* experience in terms of the combination of its elements – the intuitions. Kant's basic method is to show that the ways that intuitions are connected to form thick experience correspond to a division of the forms of judgements, that these forms of judgements again correspond to a set of pure concepts, and that the experience of nature as a law-governed whole is made possible by the application of a set of synthetic, pure principles.

b) The Arguments of Step III

Kant starts out by announcing the final aim of the TD: In §20 we established that "All sensible *intuitions* stand under the [mathematical] categories"[269] – now we want to show that *all* the categories are validly applied throughout *experience*. In Kant's words we

[269] B143, Italics added

want to effect a "Transcendental deduction of the universally possible use of the pure concepts of the understanding in experience".[270]

If the weighty notion of objects cannot be established on the basis of single, isolated intuitions, it seems natural to investigate whether it can be derived from ways of combining these, so as it were to seek groundings for the weighty notion of objects from the *relations* of single cognitions. Now, the *relational* class of judgements denotes just this: ways in which cognitions are related in judgements. And only with these relational judgements do we acquire thick experience, so the objects of "thick" experience are precisely the weighty, persistent objects as opposed to the light objects of intuitions.

Note that the synthetic principles corresponding to the *relational* categories are called Analogies of *Experience* and that §26 introduces a conception of *experience* as cognition through connected (i.e. *related*) cognitions, and also (as we shall see) introduces the notion of *laws of combination* of intuition. All this shows quite unambiguously, I think, that this part of the Transcendental is concerned with a deduction of the second division of categories – the dynamical, whereas the previous parts were concerned only with the first division – the mathematical.

Categories and Objects of Experience

When it comes to weighty objects, *all* classes of categories will be validly applicable to them, and the first point to be made is quite straightforward: Since experience consists of cognition through connected conscious representations, it is natural to assume that the representations to be connected themselves be singular cognitions, i.e. intuitions.[271] Now, since the objects of intuition are subject to the mathematical categories, and experience consists of connected intuitions, then the objects of experience must necessarily also be subject to the mathematical categories, as they are precisely the same objects as the objects of intuitions, only now viewed in terms of their being connected in judgements. Conditions for the elements combined in experience must be conditions also for the eventual combination of those elements – conditioning is basically a transitive relation. Kant's convoluted and long-winded argument is difficult to work out and contains

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[270] §26, B159

[271] This, of course is not strictly logically necessary. It is logically possible that the *objectivity* of the combination of representations (which is what makes them *cognitions*) be somehow a result of the combination itself and not be derived from the items combined; but a much simpler explanation of their objectivity seems to be that the combined items are objective, and that the combination is objective in virtue of the combined items being objective. And, again, the argumentative structure is inference to the best explanation, not logically excluding every alternative possibility.

remnants of the forms-of-sensibility model, but this seems to me to be the essence of his third sub-paragraph[272] of §26. The clearest statement is found in the final sentence:

> …all synthesis, through which even conscious representation itself becomes possible, stands under the [mathematical] categories, and since experience is cognition through connected conscious representations, the categories are conditions of the possibility of experience, and are thus also valid *a priori* of all objects of experience.[273]

Kant now goes on to giving an example of the synthesis involved in acquiring an intuition of a house. This adds little to the earlier considerations, and can safely be ignored at this stage.

Kant's next example is significant though, but unfortunately it is so brief as to be utterly incomprehensible on its own. At present, all we can glean from it is a pointer towards the discussion of the Analogies and some very general clues and hints. The important clue to note is that the correlations implied by relational judgments are tied to *time-relations,* and Kant states that through the category of *cause* "**I** determine everything that happens in terms of its relation in time as such".[274] So, it seems clear that the relational judgements and categories are tied in some way to relations of time, and we shall follow up on that lead later on.

But before we go on with this, we need to become a bit clearer about just what a "law of combination" is; and this I believe is best done by way of example. Suppose that a cognition of A is always and immediately followed in my experience by a cognition of B. In that case, those two kinds of cognitions would always be *correlated* in my experience, so they would be subject to the *law of combination* that a cognition of A is always followed by a cognition of B. In essence, laws of combination state unbreakable universal correlations. Now, showing the universality of correlations is considerably more complex than showing the universal applicability of the mathematical categories to objects of intuition, which was done in Step II. In the latter case, the categories are *constitutive:* For instance, being a unity *just is* being regarded as the subject of a singular judgement. However, no form of correlation can be constitutive of the existence of the *correlata.* They must of necessity first exist in order to be correlated at all. The

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272 B160–1

273 B161

274 B163, my translation. Guyer & Wood has **"I determine everything that happens in time in general as far as its relation is concerned",** which corresponds accurately to the German original. My translation is in this case also a slightly biased interpretation.

Analogies of Experience are the synthetic principles arising from the relational categories, and Kant states of these Analogies:

> …an analogy of experience will be only a rule whereby unity of experience is to arise from conscious representations (not a rule saying how conscious representation as such, in the form of empirical intuition, is to arise.) And such an analogy will hold, as principle of objects (i.e. appearances), not *constitutively* but merely *regulatively*.[275]

So, what then does universality of correlations amount to, and how could claims to such universality be justified? In what sense are the principles of experience regulative (as opposed to constitutive)? And finally, what is the connection between such universal correlations and the relational[276] categories?

The full answer to these questions becomes available only on completion of the Schematism and the Analogies of Experience, following the Transcendental Deduction. The Transcendental Deduction itself can do no more than give a necessary preparation and a sketch – an outline – of what is to come. We shall follow the same pattern here, and the following chapters will be devoted to following the argument through the Schematism and the Analogies. It seems to me that of the dynamical categories – the *relational* and the *modal* ones respectively – it is the relational that are more interesting, and it is here that Kant's treatment is most illuminating and fruitful. Consequently the ensuing discussion shall focus upon these relational categories, and their corresponding synthetic principles.

Universality of correlations

First, we should realise what a universal correlation is *not*. Saying that a correlation is universally valid is not claiming that any two randomly picked cognitions will somehow conform to a law of combination. Rather, the claim is that if, say, A's and B's are correlated, then *whenever* you have an A – whenever there is an instance of A-ness in

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275 A180/B222, my translation. Guyer & Wood have

> An analogy of experience will therefore be only a rule in accordance with which unity of experience is to arise from perceptions (not as perception itself, as empirical intuition in general), and as principle it will not be valid of the objects (of the appearances) **constitutively** but merely **regulatively.**

Again (cf. note 274) Guyer's & Wood's translation follows the original closely. I believe my interpretation to be slightly clearer, but having essentially the same meaning.

276 Similar questions could and should be asked also about the *Modal* judgements and categories, but the format of this thesis does not provide scope for going into these considerations here.

experience – you will also have a B – there will also be an instance of B-ness in experience. C's and D's need of course not conform to the correlation of A's and B's.

Causal relations are perhaps the clearest example of such alleged correlations in experience, and the notion of causal relations as such could be termed the *"Causal Principle"* and is basically the idea that every event has a cause. Supposing that the Causal Principle is such a universal correlation, then it will be the case that whenever there is (experience of) an event, there will also be a cause of that event *and that it not be possible that there be (an experience of) an event without there being a cause.*

It is of course this last italicised modal claim that is of interest to Kant; supposing that the Causal Principle really entails claims to necessity (and we shall see that in the Analogies of Experience Kant provides arguments that it does), then it clearly purports to go beyond experience and thus stand in need of a transcendental deduction. We need an explanation of the possibility of correspondence between experience and our concept of causal relations. Part of the Kantian paradigm is that if there is to be an *explainable* correspondence between object and concept, then there are only two options: *Either* the objects must condition the concepts *or* the concepts must somehow condition the objects.

> …either experience makes these concepts possible, or these concepts make the experience possible[277]

In the case of empirical concepts the first option obtains: The concepts are abstracted from experience of the objects and are thus conditioned by the very objects they are concepts of. But as repeatedly mentioned, this model is not applicable to the Pure Concepts, precisely because they purport to go beyond experience. This is to say that we must hold that there is more than a *de facto* correspondence between object and concept (which is sufficient for the empirical concepts) – we claim a *necessary* correspondence between object and concept. To ensure this, Kant claims, the concepts must somehow condition the objects – "the categories [must] contain the grounds of the possibility of all experience in general from the side of the understanding."[278]

[277] B166

[278] B167

> But more about *how* they make experience possible, and which principles of its possibility they yield in their application to appearances, will be taught in the following chapter on the transcendental use of the power of judgment.[279]

So we shall have to await the following chapter of the *Critique*, specifically the Schematism and the Analogies of Experience for the complete explanation of how the dynamical categories apply to experience, and only then will the task of the Transcendental Deduction finally be achieved.

But before we get to that stage, we should, as Kant does, examine the objection that the two possible explanations of the correspondence between objects and concepts adduced above are not exhaustive.

> If someone still wanted to propose a middle way between the only two, already named ways, namely, that the categories were neither **self-thought** *a priori* first principles of our cognition nor drawn from experience, but were rather subjective predispositions for thinking, implanted in us along with our existence by our author in such a way that their use would agree exactly with the laws of nature along which experience runs (a kind of **preformation-system** of pure reason)…[280]

To generalise this objection and make it independent of creationism or theological considerations, we might suggest that the correspondence of concepts and objects is due not to one conditioning the other, but to their both being conditioned by a common ground. In modern terms, this type of explanation could be instantiated by claiming that our employment of Pure Concepts is due to *evolution.* We have simply evolved to employ certain concepts, because it has turned out to be beneficial to do so. Possessing these concepts have survival value. The objects of experience are of course subject to the laws of nature, and our cognitive faculties have evolved as a result of the same laws of nature, so we have a correspondence because of a conditioning by a common ground, namely: the laws of nature, such as they are.

The problem with this hypothesis is that while it can explain the *utility* of the Pure Concepts, it cannot justify their objective validity. They *might* of course be valid, but for evolution to favour beings possessing them, it is enough that their possession is useful for survival and procreation. Evolution might for all we know favour beings who believe in a happy ending of every life, say, but that does certainly not guarantee its truth. On the evolutionary view, the correspondence between concept and object is down to luck or

279 Ibid. (italics added)

280 Ibid. (insertion following Pluhar)

coincidence, and on the creationist view it is down to divine providence. We may of course hold, with Descartes, that God would not deceive us – but why not, if it be in the interest of a greater good, say our eternal salvation? Maybe it is good, necessary even, for finite beings such as ourselves to believe in causality and the rest, but that in reality *sub specie aeternitatis*, there be no such things. If our possession of Pure Concepts be explained by evolution or divine providence, the sceptical worries may always appear to plague us.

> I would not be able to say that the effect is connected with the cause in the object (i.e., necessarily), but only that I am so constituted that I cannot think of this representation otherwise than as so connected; which is precisely what the sceptic wishes most…[281]

So, if we want to pursue the "third way" it seems that we can do no better than attributing a *subjective* necessity to the Pure Concepts – we cannot but employ them, but their validity remains at best uncertain. But how can we rule this option out? Isn't it possible that this is in fact the true explanation of why these concepts are necessarily and unavoidably employed: it is part of our nature to so employ them, and that is the end of the matter? Correspondence with reality will be as it may.

Of course such an explanation cannot logically be *ruled out*, but remember that we are engaged in giving a theory. We are inferring to the *best explanation*, and an explanation that can account for not only our unavoidable use of these concepts but also their objective validity which is undoubtedly part of what we believe, will clearly be a *better* explanation than one which leaves the question of objective validity wide open. This is just once again to note the problem with any empirically transcendental psychological explanation of the pure concepts. (See pp. 110 ff.) So, provided we can give an answer to the question of *how* the dynamical categories make "thick" experience possible, that explanation seems to be the best one.

c) Summary of the arguments of the Transcendental Deduction

The aim of the TD was to give a justification – an explanation of the validity of the Categories. This it has done in two steps:

First, it claimed that the mathematical Categories are concepts of objects considered as objects of intuitions. *Unity* is the concept of a single object having some property attributed to it, *Plurality* of several objects having some property attributed to then,

[281] B168

Totality of a collection of objects of a single kind having some property attributed to them; *Presence* is the concept of a concept being attributed to some object or objects, *Absence* of a concept being negated. They are thus in a sense concepts of aspects of intuition as such. Since we can only have experience of objects if they be objects of possible intuition, the mathematical Categories validly apply to all objects of experience.

Second, it said that the only way to explain the validity of the dynamical categories would be to show that these Categories condition the objects of experience with regard to the laws of their combination, that "these concepts make the experience possible",[282] but that the actual explanation of this form will not be given until "the following chapter on the transcendental use of the power of judgement."[283] 'The following chapter' must refer to 'On the schematism of pure concepts of understanding', but we shall see presently that not until we reach the end of Section III.3, 'Analogies of experience', of the *subsequent* chapter, 'Systematic representation of all synthetic principles of pure understanding', do we have a full explanation.

The Transcendental Deduction thus leaves us with a task: to explain how the dynamical Categories make "thick" experience possible.

To this task we now turn.

[282] B166

[283] B167

Chapter 6 – Temporal relations and Experience

The Transcendental Deduction has left us the task of explaining the validity of the dynamical Categories by showing that they somehow make experience possible. Somehow the application of the dynamical Categories is related to necessary conditions for experience through combinations of intuitions or basic empirical judgements. We shall see that in the process of explaining this, we will also find the premises needed to explain and justify our belief in certain pure, metaphysical principles. Of the full list of dynamical Categories, it is *'Substance/Attribute'* and *'Cause/Effect'* that are the ones of most interest to the present debate. The discussion of these two is also essentially interwoven and connected, so we shall in the following debate be focusing on the these two, and the corresponding pure principles of the Persistence of Substance and the Principle of Causality.

In order to effect the final validation of the dynamical categories, we have been left with a number of related ideas. First, we have the general synthetic definition of a category: a concept of an object considered as subject of forms of judgement. Secondly that the dynamical forms of judgement and *ipso facto* the dynamical Categories relate to judgments requiring *combinations* – relations – of separate intuitions or basic empirical judgements. Thirdly I have hinted on several occasions that the sort of combinations, the sort of judgements of relations that cannot be validated solely by considerations of isolated intuitions or basic empirical judgements, are *temporal* relations. In the following I shall try to bring together all of these ideas.

6.1 Time, Combination and Subsumption

In the sections immediately following the Transcendental Deduction, Kant makes the explicit connection between the need to account for our justification of empirical judgements based on combinations of intuitions or basic empirical judgements, i.e. "thick" experience, and considerations about *time* or more precisely temporal relations.

In *"On the schematism of the pure concepts of the understanding"* (The Schematism), Kant briefly recasts the original problem of how pure representations relate to their objects in terms of the notion of *subsumption.*

In the introduction immediately preceding the Schematism Kant discusses the notions of subsumption and of rules. The gist of it is that all rational application of concepts and

judgements is basically "determining whether something stands under a given rule".[284] That is to say that there is a normative aspect to all application of concepts and all judging. There is a possibility of error, and a culpability if an error is made. Both in intuition and in judgement we *determine* whether some object really falls under a "rule" – in intuition whether an object stands under a concept, in judgement whether the object picked out by the subject clause also falls under the predicate concept. In the Schematism Kant revisits the problem of the key to Metaphysics, this time in terms of the subsumption of objects under representations. This is to point out that the relation between representations and objects, be those representations pure or empirical, has a *normative* aspect. By examining the phenomenon of subsumption in general, we can again illuminate the representance of pure concepts, and now chiefly those of substance and of cause-and-effect.

Kant starts out by describing subsumption in general

> In all subsumption of an object under a concept the representations of the former must be **homogenous** with the latter, i.e., the concept must contain that which is represented in the object that is to be subsumed under it…[285]

In the case of empirical concepts this does not present any problem. The empirical concepts are generated by abstraction from the observation of ordinary empirical objects, and these concepts contain characteristics that correspond to basic sensible properties of objects.[286] The empirical concepts have as their representational content *abstractions* from what is contained in our sensible representations of the particular objects we perceive.

But this model is not applicable to the Pure Concepts. Let us take the concept of a *cause* as an example: Though we naturally observe a multitude of phenomena that in fact *are* causes of further phenomena, we never simply perceive them *as such.* There is no sensible aspect of observable objects or events that mark them out as causes – indeed any and every sensible phenomenon will typically be caused by previous phenomena and itself in turn cause further phenomena, but we never intuit something simply as a cause, hence

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284 A132/B171

285 B176

286 See section 3.3b)

> how is … the **application** of the category to appearances possible, since no one would say that the category, e.g., causality, could also be intuited through the senses and is contained in the appearance?[287]

In other words, the category is *heterogeneous* to the instances to which it is supposed to be applied, and we need some sort of explanation of how phenomena get to be subsumed under the category.

Kant's solution to this problem is to say that we need something to *mediate* between the empirical object on the one hand and the Pure Concept on the other. Since the concept and the object are completely heterogeneous, we need some mediating principle, some *medium*, which has something in common both with the concept and the object. And we find such a principle, Kant claims, in the notion of a *transcendental schema,* also referred to as a *transcendental time determination.* This, he explains,

> is homogenous with the **category** (which constitutes its unity) insofar as it is **universal** and rests on a rule *a priori*. But it is on the other hand homogenous with the **appearance** insofar as **time** is contained in every empirical representation of the manifold.[288]

So, it seems clear that a particular kind of temporal relation – "transcendental time determinations" are going to be crucial for explaining how dynamical Categories are applied to objects, and this again is supposed to be a necessary condition for having "thick" temporal experience. But just what are these transcendental time determinations?

a) "Transcendental time determinations"

First of all we should note that the term 'transcendental' is used to denote conditions of the possibility of knowledge in general:

> I call all cognition transcendental that is occupied not so much with objects but rather with our mode of cognition of objects insofar as this is to be possible *a priori.*[289]

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287 B176–7

288 B177–8

289 B25

This of course fits in well with the task left us by the Transcendental Deduction: to explain the validity of the (dynamical) Categories by way of showing them to be conditions for the possibility of "thick" experience.

Next, we should examine carefully how Kant specifies the *homogeneity* of the schemata with the objects of experience on the one hand and the Categories on the other. The transcendental time determination is said to be homogenous with the category *insofar as* it is universal (and rests upon an *a priori* rule).[290] This indicates that Kant might not think that *every* transcendental time determination is by definition universal and hence a priori, but that only if it is universal, *then* it is homogenous with a category. So we shall have occasion later on, to look for time determinations that have precisely such a universal character.

Likewise, it is not implied that every "empirical representation of the manifold", i.e. every cognition of an object necessarily "contains time", but only that *insofar as* it contains time –only if it contains time – *then* the schema is homogenous to it. Now, it is not clear whether we would say of intuitions that they *contain* time, if they, as I have argued, are essentially instantaneous (at least in the sense that their duration is irrelevant with regard to their content); and the role of schemata in connection with the mathematical Categories remains an interesting question in its own right, but one that we shall not have occasion to go into here. For "thick" experience however, for which we need precisely to *combine* single, instantaneous intuitions, there can be no doubt that *these* contain time. If intuitions are instantaneous and individuated by the time of their occurrence and if my or any other subject's intuitions are not distinguishable by spatial determinations, then the combining of them into thick experience will have to take place in time,[291] and thus the resulting complex representation of two or more instantaneous intuitions combined across time can appropriately be said to contain time. Consequently, we shall see below that it is in connection with "thick" experience and the dynamical categories that the notion of the transcendental time determination plays a vital role in accomplishing the unfinished task of the Transcendental Deduction.

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290 Since 'strict universality' is said to be one of the safe indicators of the a priori (B4), I take it that if we have a universal time determination, then we *ipso facto* also have an a priori one, so we can safely concentrate on its being universal, and then as it were get its a prioricity for free.

291 This is not *logically* necessary, of course. It is no contradiction in terms to claim that intuitions are combined in a dimension which is not time or space, but as we humans have no access to such a dimension, *we* at least must combine intuitions across time.

b) Schemata and the mathematical Categories

Kant claims that schemata are necessary as mediators between empirical objects and *all* of the Categories. However, if my reconstruction of the Transcendental Deduction is correct, it seems to me that the application of the mathematical Categories is *already* justified in the Transcendental Deduction itself, and that the notion of transcendental schemata are really redundant with respect to this first division of the Categories. The schemata *do* play a role in deriving the *Pure Principles* corresponding to the mathematical Categories, but since Kant, in my opinion erroneously, runs together *forms of sensibility* and *forms of intuition*, the proper assessment of these claims requires extensive considerations that I cannot enter into here.

I shall instead focus upon fulfilling the task of the Transcendental Deduction with regard to the *dynamical* Categories, and of these I elect to focus upon the class of *relational* Categories as I find these to be the most philosophically interesting.

There is however, one important objection that must be met before we can proceed: Kant claims that because (representation of) empirical objects is utterly heterogeneous with any Pure Concept, we need something to *mediate* between them, which is homogeneous to the object on the one hand and the Pure Concept on the other. Now, I have claimed that schemata do not play a role in the case of intuition and the mathematical Categories. So, unless I want to reject Kant's claim about the need for a *medium* between object and Pure Concept – and I certainly do not want *that* – I owe an explanation of what serves as medium in this case. Fortunately, such an explanation seems to be readily available on the basis of the preceding discussion:

The *medium* between the object of an intuition and the mathematical Categories is precisely the universal form of intuition. Being a form of *intuition* it is homogeneous with the intuition of the object and being a *universal* form it is homogeneous with the Category. Since there are only so many ways of determinately attributing some concept to some object or collection of objects, every intuition will fall under the concept of one of these ways of intuiting, and all objects of intuition will fall under such a concept mediated by the form of the intuition whose object it is. The universal form of intuition is quantity and quality, therefore every object of intuition is subsumed under the pure concepts of quantity and quality – every object of intuition has quantity and quality.

With this, we leave the discussion of intuitions and the mathematical Categories and finally turn to "thick" experience and the dynamical Categories. Henceforth, whenever I

speak of 'experience' and 'Categories' with no further specification, this should be understood as '"thick" experience' and 'dynamical Categories' respectively.

c) The medium *of synthetic judgements*

The notion of a *medium* plays an important role in Kant's epistemology beyond its role in subsumption under Pure Concepts. We have seen (on p. 154) that in order to subsume objects under Pure Concepts – i.e. Categories – we need a *transcendental schema* to act as a medium. Now, when we eventually move to seeking a justification also of the Pure Principles, which are in essence Pure Judgements, we likewise need something to act as a *medium* between the concepts being connected in the Pure Judgement.

The need for a medium is not something that is particular to the Pure Principles, but is just a special case of a requirement that is shared by *all* synthetic judgements. Judging consists in *connecting* – consciously relating – representations. In order to make true judgements, i.e. valid connections, we need some kind of grounding of the connection – some principle validating the judgement. In the case of analytic judgements, the grounding is the principle of identity: We connect as predicates concepts which are *identical to* or are *contained in* the intension of the subject concept e.g. 'all bachelors are unmarried men' or 'all horses are animals'. In the case of synthetic judgements, however, the predicate concept is by definition *not* contained in the subject concept, so we need something external to the concepts to warrant their connection. As there is no *homogeneity* between the subject and the predicate concept, we need some kind of *medium* homogenous to both, to warrant their connection, much in the same way that we needed a medium for subsumption under Pure Concepts.

There are three kinds of synthetic judgements, each with its own kind of medium.

First, and least interestingly, we have empirical judgments – ordinary judgments of experience. These "are all synthetic",[292] and their medium is experience itself: Our warrant for connecting two concepts in an empirical judgement is the concepts' co-instantiation in an object of experience, which enables our co-intuition of the two properties represented by the concepts. The object is *homogenous* to both of the concepts connected, in being an *instance* of both of them. As these judgements are precisely experiential, they are classified as *a posteriori.*

In addition to these we have the synthetic *a priori* judgements, which are the focus of Kant's interest, as metaphysics must consist solely thereof. Of synthetic *a priori*

[292] B11

judgements there are again two brands according to Kant: namely mathematical and philosophical.

Like empirical judgements, *mathematical* judgements are grounded by co-instantiation and consequent co-intuition, but in this case in *pure* intuition.[293] *Philosophical* judgements, on the other hand, of which the Pure Principles are examples, involve Pure Concepts of which we can have *no* intuition, so co-intuition cannot mediate between the concepts in these cases; and as there can by definition be no intensional factor in common between the concepts,[294] we need a third something to mediate between the concepts – a *medium*.

Now, Kant characterises judgements as "functions of unity among our representations",[295] while a *function* is "the unity of the action of ordering different representations under a common one".[296] This common representation must be a concept, of course, since no intuition can have other representations subsumed under itself, and when e.g. we connect a subject concept and a predicate concept in a singular affirmative judgement, what we do is precisely to arrange them *under the concept* of a singular affirmative judgement. (The concept of a singular affirmative judgement is of course just the concept of a judgement consisting of a singular determiner, a subject concept and the affirmation of a predicate concept; and it is thus homogeneous both to the subject concept *as such* and the predicate concept *as such*.) This then is a clue to finding the *medium* of philosophical judgements:

> But now what is this third thing as the medium of all synthetic judgments? It is just a comprehensive notion[297] containing *all*[298] our representations, namely, inner sense and its *a priori* form, time.[299]

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293 I believe that 'Intuition' here is no more than a mere homonym of the term as applied in connection with the transcendental logic. From the account of mathematics that Kant gives in his "Doctrine of Method" at the end of the *Critique*, I believe that it is reasonably clear that Kant holds that mathematical judgements are ultimately verified by co-instantiation in pure, constructed specimens – exemplars of mathematical concepts constructed expressly for the purpose of proving a mathematical point. This however requires separate treatment, which I must forego for the moment.

294 Because the Pure Principles are *synthetic* judgements.

295 A69/B94

296 A68/B93

297 *Inbegriff*

298 Italics added

299 A155/B194 (my translation). All the standard translations render this passage unnecessarily complicated and apparently unfounded. They give Kant's answer to his rhetorical question as "There is only one totality in which all of our representations are contained" (Guyer/Wood); "There is only one sum total that contains all our

Note that time is a medium of *all* synthetic judgements. For philosophical judgements then, time presumably is the *sole* medium[300] – so we shall have to investigate whether there are aspects of time determinations which on the one hand are valid for *all* judgements, and on the other hand are capable of grounding Pure Principles; and this would seem to be precisely the *transcendental time determinations* discussed on p. 154

So, as was the case with subsumption under Pure Concepts, *Time* has the role of *medium* for Pure Judgements. We shall not here dwell on the claim that time is the *a priori* form of inner sense, as that belongs to the parts of the Kantian project that I want to disregard, but we shall pursue the thought that time is the form of a comprehensive notion of all our representations, and that time determinations mediate both between Pure Concepts and their objects and between the concepts of Pure Judgements. First, we should look at the claim that time contains all of our representations.

d) Time – the container of empirical judgements

Now, what does it mean to say that time is a comprehensive notion of all representation, and therefore *a fortiori* also of all empirical representation? – In what sense are all empirical representations "contained" in the representation of time?

If we liberate ourselves from the obscure notion of time as the form of inner sense, I believe that this claim turns out to be relatively straight-forward: It is a simple – I dare say *brute* – fact that all our representations stand in time-relations. Any kind of representation which I have, produce, become aware of, perform, express, apprehend or what have you, must have some kind of *occurrence.* Any *instance* of representation, any

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representations…" (Pluhar) or "There is just one whole in which all our representations are contained…" (Kemp Smith). This is implausible both by purely linguistic considerations and in terms of argumentative structure:

From a linguistic point of view, the standard translations make one expect that Kant had used the German phrase *'es gibt…'* rather than the *'es ist…'* of the actual text. (This is basically the same distinction as that between 'there is' and 'it is' in English.) In addition, they all seem to be guilty of failing to make a concept/object distinction: While *'Inbegriff'* lacks an obvious counterpart in English, it must clearly be a kind of *Begriff* – a concept – and thus is a rather a *representation* of a totality or "totalitarian" representation, rather than a totality itself. My 'comprehensive notion' seeks to do justice to this. 'Highest concept' might be an alternative, but that should be reserved as a technical term in Kant-interpretation see below, p. 205

In terms of argumentative structure, Pluhar's and Kemp Smith's rendering makes Kant's conclusion rest on a conspicuously missing and dubious premise: Why should there just be one "totality", "sum total" or "whole" which contains all our representations? Surely our *consciousness,* for one thing, contains all our representations as well?

Given the translation proposed here, on the other hand, the quoted passage constitutes a natural conclusion to Kant's discussion and the way he poses his rhetorical question. If connecting representations in judgements consists of subsuming them under some common concept, what could be more natural than to say that *all* judgments contain representations that fall under some concept that comprises some aspect of representation as such?

300 While empirical and mathematical judgements are additionally mediated by empirical and pure intuition respectively.

token as it were, takes place in time – even if the relevant *kind* of representation, its type, may perhaps be said to have a timeless or abstract quality. *Why* I cannot have, nor conceive of having, any instance of a representation not standing in time-relations to all of my other representations may be an empty question – and it is certainly not one which need or could be answered here. I cannot at any rate see how it could be claimed that we have or could have any empirical representations which do not, both in respect of their occurrences as representations *and* in respect of what they represent, stand in mutual time-relations (even if the time-relations might be different with regard to the representations as *vehicles* on the one hand and with regard to the represented *content* on the other hand).

If then, there is a limited number of kinds of time-relations, that will place restraints on the possible connections of representations, so we are on the track of universal aspects of experience, solely by consideration of the *form* of empirical knowledge. Hence we should like to know the nature of all basic time-relations.

Any such determination of the total number of kinds of time-relations would have to be reached by analysis, and as is his wont, Kant simply presents the result of this analysis without further ado:

> The three *modi* of time are persistence, succession and simultaneity[301]

One might feel that surely *duration* and *change* must be basic time-relations which should be included among these three, but I believe that it can be seen quite easily that these are not *basic* relations, but *derived* from the three basic ones: *Change* is derived from a combination of persistence and succession (as we shall have occasion to examine in detail below), while *duration* is derived from a comparison of types of changes, where one type of recurring change is chosen as a *unit.*

At any rate, Kant assumes in the *Critique* that there are exactly these three *modes of time,* and the chapter on the Analogies of Experience is structured around this assumption: There are three Analogies, each of them related to one mode of time; each Analogy provides justification for the applicability of a Pure Concept[302] and the truth of a Pure Principle.

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[301] A177/B219

[302] Namely the relational Categories. (strictly speaking, two of them are concept-*pairs:* Substance–accident and cause–effect)

Again, one might want arguments for why we should assume that there are exactly these three basic time-relations. Even if none of these can be reduced to any of the others, how can we know that the list is complete?

As the list is derived by analysis, we can never logically rule out the possibility of further possibilities, but the onus would seem to be on the opponents of Kant to provide examples of time-relations which cannot be reduced to these three. Myself, I can see no such; nor any possibility thereof, but should there be, it would make little difference to the fundamental point which is that there is a limited number of kinds of time-relations, each one related to a pure Concept and a an Analogy of Experience. Were there to be additional basic time-relations we should expect to find additional Analogies of Experience.

e) Particular and general time-relations

Because of the conceptual element in every cognition – explicit with Kant in the case of concepts, and implicit in the treatment of intuitions (or so I claim, at least) – any cognition will have both a particular and a general aspect. It will be *particular* in terms of its occurrence and the object it represents; and *general* in terms of the concept or concepts involved.

Now, cognitions will obviously stand in particular time-relations in terms of their particular occurrence – say for instance I saw Tom before hearing Dick and Harry yesterday; but there will also be a number of *general* time-relations among our cognitions – say I always see Tom before going to lunch with Harry, for instance. General time-relations could be termed *typical,* while we could use the term *'occasional'* for particular ones.

In looking for transcendental time-determinations, then, which by definition are universal time-relations, we should be looking for *general time-relations without any possible exceptions – strict* typical time-relations, which is a clue we shall follow in the reading of the Analogies below.

I aim to demonstrate that it is important to distinguish clearly between occasional and typical time-relations, but that Kant himself does not always do so explicitly.

6.2 Objectivity and the object of Experience

We now have the ideas that strict typical time-relations are necessary to mediate between Categories and objects, thus enabling the application of the Categories, and that this in

turn must be shown to be a necessary condition for and an explanation of the possibility of "thick", temporal experience.

To pick our way through this complicated collection of ideas, we should first make something of a tactical retreat and look at what sort of temporal experience we actually have, what sort of judgements we make concerning temporal relations.

First of all, we should note that in judging of the temporal relations between intuitions or empirical judgings, we can and do make a distinction between *objective* and mere subjective validity in precisely the same way as we do in the case of judgments and intuitions as was discussed in sections 5.3a)–b).

a) Successions of experiences and the experience of succession

Let us start out with some examples of kinds of experiences and the distinctions we draw between them. Imagine that I am standing on the pavement of Parliament Square in London one fine spring day. Looking around, I first look at Westminster Abbey, momentarily interrupted as a double-decker Routemaster bus passes in front of it, then I spend a few moments admiring the Houses of Parliament, and finally I observe a boat passing downstream underneath Westminster Bridge.

In each of these three cases, we may suppose my experience to consist of a series of more or less distinguishable perceptions.

In the first case I observe, let us say:

> *West transept, Stained-glass window, Red engine hood, passenger door, marble doorway …*[303]

Admiring the Houses of Parliament, I am delighted to find the following:

> *Turret, window, wall, column, brick, window, door …*

And finally, watching the boat passing downstream underneath Westminster Bridge, my perceptions comprise:

[303] These examples should not be understood as being limited to visual perceptions, but will as a matter of course normally include aural, kinaesthetic, tactile, olfactory and even gustatory ones as well.

> *Murky water, half concealed prow, stern, railing, tarmac, car, car, bus, car, railing, prow, half concealed stern …*

Now in all these cases, there is clearly some temporal *relation* obtaining between these representations considered as mental entities, insofar as they were *had by me* at a particular stretch of time. Furthermore this is clearly in one sense an objective fact: It is objectively true that these experiences were had successively by me on each occasion. However, when we enquire into the objective validity or reality of a set of representations, we are normally interested in more than the mere fact that these representations were actually had by someone. If, on a sunny day, you were to say: "**I** think it is raining", I would not reply "Yes, you're right", meaning that you are correct in asserting that 'it is raining' is actually what you are thinking at the moment. Rather, I would say that you were *wrong* in thinking that it is raining, when in fact the sun is shining. This illustrates the very different sense in which we can enquire after objective relations of perceptions, namely in terms of the *objects being represented* by these perceptions, not just in terms of these perceptions actually occurring. Exactly as it is objectively true to say that *I had successive experiences as of* a stained-glass window, a marble doorway and so on; provided that my experiences be veridical, it is also objectively true that a stained-glass window, a marble doorway and so on *were presented to me.* While both these sets of relations are in some sense objective, they are so as it were from different perspectives. The relation between my perceptions-regarded-as-objects, irrespective of their veracity is surveyable only *on reflection.* Only when I or someone else reflects upon my experience as such, can these relations be assessed. In *having* these experiences, my attention is *ipso facto* directed towards that which is being represented, and in order to *attend to* the relations of the representations – the experiences – as such, these in turn become the objects of further representations, i.e. my (second-order) thoughts of having these thoughts about the immediate environment of Parliament Square. The relation between the perceptions-as-objects, though objective as viewed on reflection, is *in terms of my having the perceptions* most naturally termed a *subjective* relation of perceptions, inasmuch as the perceptions are related *in the subject having the perceptions;*[304] while the

[304] Somewhat puzzlingly, Kant seems to hold that the subjective relation of perceptions is always successive. But surely, at the very least ,sensorially distinct perceptions may well be concurrent and not necessarily successive. Indeed, sometimes even distinct perceptions of the same sensorial modality may be concurrent, as when hearing two sounds at the same time (ask any musician). This in no way invalidates Kant's argument though. The point is merely that the perceptions have some sort of *occurently* temporal, subjective relation, and that this is somehow distinguished from their objective relation.

relation obtaining to that which is being represented should properly be called the *objective* relation, inasmuch as the relation holds between *the perceived objects.*

Now, as it happens, we often judge that the subjective relations of our perceptions are different from the objective relations that obtain between the objects represented by those perceptions, which means that the true objective relation of objects of perception is *undetermined*, or rather *underdetermined* by the mere occurrent temporal relation of the perceptions.

> I am … only conscious that my imagination places one state before and the other after, not that the one state precedes the other in the object; or, in other words, through the mere perception the **objective relation** of the appearances that are succeeding one another remains undetermined.[305]

Given, that we *do* make the distinction between subjective relations of perceptions and objective relations of objects of perceptions, we do in fact cognise this objective relation. But as we have seen, it is underdetermined by the subjective relation, so the question then is what more we have access to that *enables* us to cognise this objective relation. Since we have no immediate access to the objects of perceptions, save *through* the perceptions that represent them, it is something of a puzzle how we are able to draw this distinction, and the solution to this puzzle will cast considerable light on the nature of human knowledge.

Of course, one response to this puzzle is to deny that we draw the distinction and claim that all our judgements really concern only the subjective relations of perceptions. This strategy leads fairly directly to a kind of scepticism which Kant finds unacceptable. So the first task would be to produce simple, uncontested examples of cases where this distinction is drawn in ordinary experience, next to offer an explanation and justification for our ability to distinguish between the subjective and the objective.

We shall look at how Kant states the problem of the distinction between the subjective and the objective; then point out some examples of how we actually routinely make this

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> The apprehension of the manifold of appearance is always successive. The representations of the parts succeed one another. Whether they also succeed one another in the object is a second point for reflection. (A189/B234–5)

All that is claimed here, is that this distinction is in fact drawn – as demonstrated by the fact that we do not invariably infer from the subjective relation of perceptions to the objective relation of objects of perception. *How* we are able to draw the distinction, is what we seek to find out.

[305] B233–4

distinction, related to the examples of my experiences in Parliament Square, before we turn to the theoretical explanation of our ability to distinguish the subjective and the objective.

Kant sets out the enquiry into the distinction between subjective and objective relations of representations at the beginning of his discussion of the 2nd Analogy of Experience[306]:

> [O]ne can, to be sure, call everything, and even every representation, insofar as one is conscious of it, an object; only what this word is to mean in the case of appearances, not insofar as they are (as representations) objects, but rather only insofar as they designate an object, requires a deeper investigation.[307]

Let us first contrast my experience of Westminster Abbey while a bus is passing in front of it with my experience of the Houses of Parliament. In both cases we have a set of perceptions that are both objectively and subjectively *combined*. On the occasion of my having these experiences, a certain combination of objects was present, thus enabling a combination of perceptions to be had by me. However, certain *counter-factual* relations obtain in the one case and not the other. Take my experience of Westminster Abbey, rather annoyingly interrupted by the bus passing in front of it. It is perfectly possible that I observe Westminster Abbey *without* a bus passing in front of it. Though the perceptions of the bus and the perceptions of Westminster Abbey occurred together in my experience that fine day, there is no *necessity* of them doing so. I could well experience the Abbey without the bus, and what I would then be experiencing would still be the very same Westminster Abbey. Objectively the co-presence of the bus and the Abbey is merely contingent.

Not so with the observation of the Houses of Parliament: Let us say that I perceive first the foundations, then the ground floor and work my way up to the roof. In this case, it is clear that I could not have one of these perceptions, without at least *being able to* have the others. Even though I might not actually continue my perusal of the architectural delights of the palace of Westminster, these delights would at least always be *available* as a package. A house has parts that are *necessarily* co-present for perception – 'necessarily' in the sense that they could not come apart without the object itself being disintegrated or radically altered. So long as the Houses of Parliament are still standing,

306 This problem is also treated in the 1st edition of the Transcendental Deduction, see for instance A108–9

307 A189–90/B234–5

whenever their foundations are perceivable to someone, then the ground floor will also be in principle available for perception.

There is thus an *objective* distinction between the experience of Westminster Abbey interrupted by a bus passing in front of it and the experience of the Houses of Parliament. In the latter case there is a *necessary* relation between the objects of perception while in the former there is a mere *contingent* one. On the *subjective* level, when we regard only the perceptions as such, without regard to what they represent, all we have is a collection of successive perceptions which we can imagine being recombined and re-experienced in any kind of order. Surely it takes no great leap of imagination to suppose that, for instance in a dream or in some hallucinatory state, one might have the perceptions of the Houses of Parliament in a jumbled and incomplete order. The notion of the *necessary* relation of perceptions seems to be empty on the subjective level, yet we employ it on the objective level, when we judge that the bus and Westminster Abbey were merely contingently co-perceived, while the different parts of the Houses of Parliament are necessarily co-perceived.

This difference between the subjective and the objective relations are even clearer if we compare the experience of the Houses of Parliament with the experience of the boat passing downstream underneath Westminster Bridge.[308] In both these cases the *combination* of perceptions is *necessary* in the Kantian sense – they are objectively related. However, in the former case the *order* of the perceptions is objectively contingent, while in the latter case it is necessary. I can easily imagine having the collection of perceptions of the Houses of Parliament in the reverse order from that in which I actually had them and still be perceiving the very same object, i.e. the Houses of Parliament themselves. Not so in the case of the boat passing downstream underneath Westminster Bridge: I first see the boat upstream of the bridge, then disappearing under the bridge and finally reappearing downstream of the bridge. While I can of course imagine having these perceptions in the reverse order, I cannot do so without imagining experiencing *a different state of affairs.* If the order of the perceptions be reversed, that would amount to my observing a boat passing *upstream* underneath Westminster Bridge, rather than it passing *downstream* as in the original experience. In the case of the experience of the Houses of Parliament, the order of the perceptions is *irrelevant* to the experience being *of* that state of affairs; while in the case of the experience of the ship

[308] This is simply a slight embellishment of Kant's own examples: of seeing a house and of seeing "a ship driven downstream"

passing downstream, the order of the perceptions is *essential* to it being an experience of the relevant state of affairs.

This brings us closer to the sense of *necessity* that Kant is invoking here. As is so often the case, the necessity is not some kind of "metaphysical" necessity – true in all possible worlds – but much more straightforwardly a *necessary condition*. If the order of perceptions is a necessary condition for the experience being the kind of experience that it is – e.g. seeing the ship first upstream and then downstream is a necessary condition for the experience being *as of* a ship passing downstream – then that amounts to a necessary order of perceptions.

> I see a ship driven downstream. My perception of its position downstream follows the perception of its position upstream, and it is impossible that in the apprehension of this appearance the ship should first be perceived downstream and afterwards upstream.[309]

Now, in what sense is it impossible that the time-order of the perceptions be reversed, i.e. in what sense is the time-order necessary? Clearly I could have perceptions of a ship first downstream and then upstream, but not without experiencing *a different event*. So the time-order of the perceptions involved in experiencing a ship passing downstream is a necessary condition for having an experience of the kind of event being experienced.

So, we distinguish between experiences where the time-order of perceptions is necessary (the boat passing downstream), and experiences where the time-order is arbitrary (the Houses of Parliament). Now, I want to claim that this distinction amounts to the distinction between experiences of *objects* and of *events.* In both these cases the mere *combination* of perceptions – the co-presence – of the perceptions is deemed to be necessary, and both these kinds of cases are contrasted with cases were the combination itself is arbitrary (the bus passing in front of Westminster Abbey). Now, whence this *necessity?* Since the necessity only pertains to the objective relations and not to the subjective, it seems likely that if we can find the justification for this judgement of necessity, we might also expect to find the justification of the distinction between the subjective and the objective.

Graham Bird also reads the first two Analogies basically as answering this question.

> When we perceive first the roof and then the basement of a house, we perceive in succession two states of the same object, but nobody would normally say, as Kant points

[309] A192/B237

> out (B235), that this is to perceive an event … Kant argues that because there are some descriptions of perceived states in the same object which do not yield event-descriptions, the latter inference is not valid. He concludes from this that the perception of states in an object is not enough to discriminate between events and non-events.[310]

b) Rules of Apprehension

As the above discussion has shown, I am routinely able to distinguish the subjective relation of perceptions from the objective relation of the objects of perception, and making this distinction is tied in with judgements of necessity on the objective side of the distinction. The question is how I am able to judge of this necessity, hence to draw the distinction between the subjective and the objective – between the objects of experience and the experience of the objects.

It is clearly no good to suggest that I *compare* my representations and the relations between them with the objects they represent and any relations between these objects themselves. My access to the objects of representations is exclusively *through* these representations, so there is no way I can assess the objects themselves independently of my representations of them. If I regard solely the representations involved in each instance of experiencing, all I have is some list of the kind exemplified on p. 162. So, how can I distinguish the order in which the list of perceptions was presented to me from the objective order of the objects of those perceptions? From looking at the list *alone* there is no way that I could draw this distinction.

> We have representations in us, of which we can also become conscious. But let this consciousness reach as far and be as exact and precise as one wants, still there always remain only representations, i.e., inner determinations of our mind in this or that temporal relation. Now how do we come to posit an object for these representations, or ascribe to their subjective reality, as modifications, some sort of objective reality? Objective significance cannot consist in the relation to another representation (of that which one would call the object), for that would simply raise anew the question: How does this representation in turn go beyond itself and acquire objective significance that is proper to it as a determination of the state of mind?[311]

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310 Bird, p. 157–8

311 A197/B242

So the ability to make this distinction must come from something else than the mere collection of representations, but not from the objects themselves as we have no unmediated access to them – so whence?

Kant's slightly cryptic solution to this puzzle is stated thus:

> One quickly sees[312] that, since the agreement of cognition with the object is truth, only the formal conditions of empirical truth can be inquired after here, and appearance, in contradistinction to the representations of apprehension, can thereby only be represented as the object that is distinct from them if it stands under a rule that distinguishes it from every other apprehension, and makes one way of combining the manifold necessary. That in the appearance which contains the condition of this necessary rule of apprehension is the object.[313]

This is a brief restatement of a section of the 1st edition version of the Transcendental Deduction, where Kant discusses the very notion of an object of experience as distinguished from our representations of it. As these ideas are of central importance and show clearly the tight connections between the Transcendental Deduction and the subsequent sections of the Transcendental Analytic, I shall quote this section in full:

> It is clear, however that since we have to do only with the manifold of our representations, and that *X* which corresponds to them (the object), because it should be something distinct from all of our representations, is nothing for us, the unity that the object makes necessary can be nothing other than the formal unity of the consciousness in the synthesis of the manifold of the representations. Hence we say that we cognize the object if we have effected synthetic unity in the manifold of intuition. But this is impossible if the intuition could not have been produced through a function of synthesis in accordance with a rule that makes the reproduction of the manifold necessary *a priori* and a concept in which this manifold is united possible. Thus we think of a triangle as an object by being conscious of the composition of three straight lines in accordance with a rule according to which such an intuition can always be exhibited. Now this **unity of rule** determines every manifold, and limits it to conditions that make the unity of apperception possible, and the concept of this unity is the representation of the object = *X*, which I think through those predicates of a triangle.
>
> All cognition requires a concept, however imperfect or obscure it may be; but as far as its form is concerned the latter [concept] is always something general, and something that serves as a rule. Thus the concept of body serves as the rule for our cognition of outer appearances by means of the unity of the manifold that is thought through it. However, it

[312] When Kant uses formulations like 'obviously', 'clearly' and 'one quickly sees that' – beware. The implicit arguments needed are normally far from simple.

[313] A191/B236 (My underscoring)

> can be a rule of intuitions only if it represents the necessary reproduction of the manifold of given intuitions, hence the synthetic unity in the consciousness of them.[314]

These compact paragraphs contain a number of intricately related ideas. The main idea we are after is the origin of our ability to distinguish between subjective and objective relations of perceptions, which in turn provides the ground of the notion of an object of experience as distinct from the experience of it.

According to Kant, the key to making this distinction between subjective and objective relations of perceptions is clearly to examine whether the set of perceptions in question stand under a "a rule that distinguishes [them] from every other apprehension". So there is apparently some kind of "rule of apprehension" that will tell us that *this* set of representations correspond to an objective relation of perceptions, while *that* set does not. Now, what are these *rules of apprehension*, how do they provide us with at distinction between subjective and objective relations of perception and how do we have knowledge of these rules?

c) The faculty of rules

Initially we should look into the notion of 'rule' itself, as this is an idea that Kant makes widespread use of all through the *Critique.* First of all it is illuminating to note the connection between the notion of a *rule* and that of *regularity*. The German term for 'regular' is *'Regelmäßig'*, which means literally 'rule-likeness' or 'in accordance with a rule', and is etymologically related to the term for 'rule': *'Regel'*. This intimate connection is present also in English, inasmuch as the word 'regular' stems from the Latin term for 'rule' – *'regula'*, and the literal meaning of 'regular' is "conforming to a rule or principle; systematic".[315] We should also note that regularity has clear connotations of *generality*. To speak of a regularity which is never repeated is clearly nonsense. One of the senses of 'regular' listed in the Concise Oxford Dictionary is "acting or done recurring or uniformly or calculably in time or manner; habitual, constant, orderly." This implication of generality is important, so we should keep it in mind.

Next we should examine the close terminological connection Kant makes between the notion of a *rule* and that of a *concept*. We find a clear statement of this connection in the passage from the Transcendental Deduction which was quoted on p. 170:

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[314] A105–6 (My underscoring)

[315] The Concise Oxford Dictionary of English, 9th ed. 1995

> All cognition requires a concept, however imperfect or obscure it may be; but as far as its form is concerned the latter [concept] is always something general, and something that serves as a rule.

In other words: The *form* of a concept is always something *general*, and something that *serves as a rule*. This echoes Kant's point from the very beginning of his *Logic*, which was quoted on p. 73, namely that the logical form of a concept is *generality* – i.e. its capability of having *several* instances subsumed under itself.[316] Here, this connection between concepts and generality is further related to the notion of a rule.

Again a fuller discussion is found in the 1st edition of the Transcendental Deduction:

> We have above explained the **understanding** in various ways – through a spontaneity of cognition (in contrast to the receptivity of the sensibility), through a faculty for thinking, or a faculty of concepts, or also of judgements – which explanations, if one looks at them properly, come down to the same thing. Now we can characterize it as the **faculty of rules.** This designation is more fruitful, and comes closer to its essence. Sensibility gives us forms (of intuitions), but the understanding gives us rules. It is always busy poring through the appearances with the aim of finding some sort of rule in them. Rules, so far as they are objective (and thus necessarily pertain to the cognition of objects) are called laws. Although we learn many laws through experience, these are only particular determinations of yet higher laws, the highest of which (under which all others stand) come from the understanding itself *a priori*, and are not borrowed from experience, but rather must provide the appearances with their lawfulness and by that very means make experience possible.[317]

Important here is the claim that rules are the work of understanding, not of sensibility. Since these rules are what enable us to distinguish between subjective and objective relations of representations, hence to form the notion of an object of experience distinct from our experience of it, it is clear that Kant holds that the notion of an object of experience is not simply *given* by sensibility – which amounts to little more than reiterating that from a mere enumeration of a particular collection of representations we can draw no distinction between the representations and what they represent.

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316 Of course, the world might be such that only one or even no instances are given of a particular concept, but there is nothing on the side of the concept to preclude there being more than one instance. Notions like 'the greatest possible being' or 'the tallest spy' might be seen as counter examples, but I believe it is most natural to analyse these in terms of *operators* consisting of the definite article and the superlative form of the adjectives operating on the truly general concepts 'great', 'being', 'tall' and 'spy'.

317 A126

d) The criterion of objectivity

Keeping these inter-related notions in mind, let us return to Kant's explanation of how we draw the distinction between subjective and objective relations of representations and thus are able to represent an object as distinct from our representations of it, if (and only if) it "stands under a rule that distinguishes it from every other apprehension, and makes one way of combining the manifold necessary."

Now, I take it that saying that an object stands under a rule of apprehension that distinguishes it from every other apprehension must mean simply that my apprehension of it conforms to a *distinct regularity* among my apprehended perceptions. In other words, I can only realise and correctly judge that a particular collection of perceptions correspond to an objective relation of appearances by collating it with other apprehended perceptions and finding that it conforms to a form of regularity among perceptions that I have previously encountered.[318]

Take the example of my observing the Houses of Parliament. The reason that I can correctly judge that this observation corresponds to the objectively existing Houses of Parliament themselves is that the sequence of my perceptions correspond to general patterns among the totality of my perceptions. Partly, this is trivial of course: I recognise it as a *building* because I have previous experience of buildings, I identify the building as *The Houses of Parliaments* because I have previously had them pointed out to me, seen images of them or had them described to me – thus having acquired the *concept* of them, which I now apply to the houses themselves. So far, we are in complete agreement with the empiricist model of experience. Ordinary empirical concepts are abstracted from experience, and our ability to acquire these concepts is essentially explainable in terms of our ability to *recognise* patterns of perceptions.

However, this ability to recognise *previously encountered* patterns of perceptions, while explaining our mastering ordinary empirical concepts such as 'house' and 'bus', cannot account for our ability to draw a distinction between *subjective* and *objective* relations of perceptions, since there is nothing in the "list" of perceptions which by itself grounds the making of the distinction. Since we clearly *do* make this distinction – even if I have previously repeatedly observed buses passing in front of Westminster Abbey, and

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[318] Note that we are not enquiring into the *meaning* of the concept of an object of experience distinct from the experience of the object. We have a quite clear understanding of what this means, namely precisely an object of experience distinct from the experience of the object. If we did not understand the meaning of this, how could we even enquire into how this concept could have a valid application? But knowing this meaning does not by itself give us any application criteria for the concept, and *that* is what we are enquiring after. This illustrates the gap between meaning and application criteria that was discussed in section 2.3

so am in a position to recognise this particular pattern of perceptions, I clearly distinguish between the bus and the abbey – the empiricist model does not provide a full explanation of our actual epistemic practices.

The empiricist model *can* adequately explain how we acquire "feature-placing" abilities: Different features of the environment present themselves to us, and we gradually acquire an ability to recognise these features, and subsume them under basic qualitative concepts. Similarly we become versed in the application of more complex concepts, i.e. sortals, as combinations of basic qualitative concepts.

This model however, cannot account for the notion of an object of experience distinct from our representation of it. From an ability merely to recognise and successfully distinguish between representations of different general features, there will be no way to get to a notion of an object distinct from these representations, since what cannot be represented by first-order representations, however complex, is their relation to their object.

The virtue of the Kantian theory of knowledge is to point out a candidate validation of this notion, namely that with reference to certain *pervasive patterns* among our representations can we begin to ground the notion of an object of experience distinct from our experience of it. By looking for pervasive patterns, we can notice that certain correlations of perceptions *always go together*, say visual impressions of roundness and glossiness always go together with tactile sensations of smoothness and hardness in my experience of a china cup, whereas the perceptions of bus and Westminster Abbey do not always go together. Their co-apprehension has a comparative regularity, but no strict universality. By contrast the perceptions involved in the cognition of a china cup form a universal relation within my experience, which is just Kant's definition of a *necessary* relation among perceptions.

> If we investigate what new characteristic is given to our representations by the **relation to an object**, and what is the dignity that they thereby receive, we find that it does nothing beyond making the combination of representations necessary in a certain way, and subjecting them to a rule; and conversely that objective significance is conferred on our representations only insofar as a certain order in their temporal relation is necessary.[319]

Here it is necessary to guard against confusion. The claim is *not* that there is one rule such that subjecting our representations to *it* confers objective significance on them.

[319] A197/B242–3

Rather the claim is that insofar as our representations are subjected to some – *any* – rule of the requisite kind, they have objective significance conferred upon them. The notion of the object of experience is thus a kind of *reflective* or *second-order* representation – roughly the notion of types of representations – any representations – being universally correlated in apprehension.

We are then *not* looking for some set of general features that all and only objects have – *that* would amount to an *empirical* deduction of the concept of object and would have to proceed analytically. Rather, what we are after is more the notion of *something being objectively the case*, as opposed to mere subjective relations of perceptions. Kant's explanation here is that our notion of an object of experience in this sense should be regarded as a second-order representation *of* first-order empirical representations being universally correlated in experience. The more universal a correlation of perceptions is in experience, the stronger grounds we have for believing that it corresponds to an objective state of affairs. And asserting a correlation of a set of perceptions just is subjecting them to a rule in Kant's terms.

Further, subjecting representations to a rule must be equivalent to subsuming them under a concept, and subjecting them to a rule which makes their combination *necessary* in a certain way then seems to be nothing else than subsuming them under a *pure* concept – in this case the concept of the object as such. This must be the elusive "concept of the transcendental object" which Kant discusses in the 1st edition of the Transcendental Deduction:

> The pure concept of this transcendental object (which [concept][320] in all of our cognitions is really always one and the same = *X*)[321]

This is precisely the notion of an object of experience *as such*. Since it applies to every experienceable object or objective state of affairs, it can of course have no particular

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[320] In the original (as in Guyer's and Wood's translation) it is ambiguous whether 'which' refers to 'object' or 'concept' i.e. whether it is the transcendental *object*, or the *concept* of the transcendental object which stays the same in all our cognitions. I fail to see how it can make *any* kind of sense to suppose that the object of representations stay the same throughout all cognitions, though earlier translators and commentators seem to have thought so. An exception to this is Graham Bird, who observes:

> …Kant makes it clear that it is not so much the thing, to which the phrase 'transcendental object' purports to refer, which is so important, as the concept of such a thing. (Bird 1962, p.5)

[321] A109

empirical content, hence "= *X*". It is rather a *formal* or second-order concept, a concept of ways in which first-order representations can be related.

But, the empiricist might object, this concept again is still just extracted from experience: Even if subsumption under a formal object-concept is slightly more complicated than simply recognising for instance the colour red, it is still something you derive purely from past experience – an exception-less combination of perceptions – all its elements are drawn from experience: where else could they come from?

Now, this objection leads us to the heart of the matter. While it is true that the elements of the combination are drawn from experience, it doesn't follow that the *form* of the combination, can simply be read off of experience. In what way does experience instruct us to look for *these* correlations of perceptions rather than others? Why favour these relations? Sensibility and perception merely furnishes us with the individual representations, and they can be connected and "held together" in any number of ways. Why attach special significance to collections of perceptions that conform to strict pervasive patterns? Why not instead look for *new* patterns, for instance – why not seek out collections of perceptions that we have never seen before, and try to rearrange our past experiences into a maximum number of unique sets of perceptions? At the very least this would to lead to an astonishing level of innovation in thinking – why should that not be desirable?

The Kantian answer, which will be examined in detail in the ensuing sections on the Analogies of Experience, is that favouring these correlations makes possible objective experience, i.e. grounds the notion of an object of experience distinct from our experience of it. Favouring universally combined perceptions enables us to conceive of the world in terms of distinct objects, not just as individually disjoined features; while favouring temporal patterns of perception in which certain co-located characteristics remain while others alternate enables us to conceive of – think about – the world in terms of *objects persisting through change* – and thus in terms of transformations of those objects – *events*. This description of the form of event-experience as patterns of perceptions in which some characteristics remain while others alternate thus amounts to a specification of the form of event-concepts. Since this form cannot simply be given by experience – Why favour *this* form rather than others when any number of forms, combinations, will be instantiated among the sum of our perceptions? – imposing this form on our experience, favouring this regularity, "dictating" this rule, is a necessary condition for the experience of objective events; which is just the thesis that we are attempting to justify.

A consequence of this theory of knowledge, since it holds that the ability to distinguish between the subjective and the objective is grounded in an ability to recognise the general or universal in perceptions, is that a new-born baby, upon openings its eyes and ears to the world would not be able to distinguish between the subjective and the objective relations of its novel experiences, which would seem to be an empirical consequence that so far has not been falsified.

6.3 Dictating Laws to Nature

As we move into the discussion of the Analogies of Experience, it seems that Kant's notion of experience undergoes a subtle shift. In arguing for the existence and validity of the mathematical Categories, Kant needed no more than the notion of experience as consisting of true basic empirical judgements, whereas in the discussion of the dynamical Categories and the Analogies of Experience Kant relies essentially on a notion of experience as being of a law-governed, systematic *nature*. This is a complicated web of ideas that needs to be brought out more clearly, before we can proceed. To this end, I shall first recapitulate some of the reasoning that has gone into the explanation of the validity of the mathematical Categories.

a) Categories and basic experience

The starting point is the observable fact that we have experience consisting of basic empirical judgements. We make, exploit and communicate ordinary empirical judgements, using ordinary empirical concepts like 'horse', 'table', 'apple', 'green', 'round' and so on and so forth. Now, the validity of the mathematical Categories was explainable by investigating necessary conditions for having this basic kind of experience. So, what were these necessary conditions?

We have to assume that we are able to apply empirical concepts as subject- and predicate concepts in basic empirical judgements. From this assumption we can explain how we are able to experience *presence* and *absence*, *unity* and *plurality*, namely as objects considered as subjects of basic empirical judgements of specific forms. Thus, we have explained the validity of the mathematical Categories by reference to necessary subjective conditions for having the kind of experience that we happen to have. Now, Kant claims that categories "make experience possible" and "contain the grounds of

the possibility of experience in general from the side of the understanding".[322] The latter formulation can be made sense of, but the former seems to be misleading or at best imprecise; although it is not too difficult to see what correct idea might lie behind it.

We have seen that there are necessary conditions on our cognitive capacities for our having experience consisting of true basic empirical judgements. Now, I have argued that the correct definition of the mathematical Categories are as concepts of objects considered as subjects of basic empirical judgements. This is what I had in mind by saying that the Categories are second-order concepts:[323] The mathematical Categories are concepts of objects falling under concepts applied in basic empirical judgements – they apply to objects *by way of* the formal aspects of basic empirical judgements. The ability to apply empirical concepts in specific ways corresponding to these formal aspects are necessary conditions for having experience; and the Categories have these formal aspects as part of their *meaning* – part of that in virtue of which they apply to objects. Recall that Kant talks of concepts as *containing* their intensional constituents – their meaning-components – so it makes sense for Kant to say that the Categories contain the grounds of the possibility of experience in general. However, that is *not* yet to say that the Categories themselves make experience possible, it seems to me. What makes experience possible is our ability to apply empirical concepts in judgements of certain forms. Let's grant the Kantian term *'synthesis'* for this ability, and we can say that *the Categories contain the functions of synthesis that make experience possible.* It is *this* thought in *this* precise sense we need in order to understand Kant's claims about the necessary conditions for thick experience and the relation of these conditions to the dynamical categories.

b) Laws and Nature

In his discussion of the dynamical categories and the Analogies of Experience, Kant makes use of, and sometimes equivocates between two related ideas. One is the notion of thick experience, that is experience consisting of complex empirical judgements, i.e. judgements that require the combination of two or more basic empirical judgements. The other idea is of experience of nature as a law-governed whole – experience as a system of knowledge of natural laws. I have already mentioned several times the idea of some judgements relying on combinations of simple judgements. The precise kinds of judgements that this involves will be dealt with in the discussions on the three Analogies

[322] B167

[323] See p. 68

of Experience. However, Kant's notion of nature as a law-governed whole is more mysterious and needs to be looked into more carefully.

The claim that Kant makes as regards the nature as a law-governed whole, taken at face value, must strike one as deeply puzzling – namely *that understanding prescribes laws to nature and thereby makes nature possible.*[324] This might seem the most rampantly subjectivist idealism and will no doubt be quite unpalatable to many thinkers. But with some careful untangling of the number of ideas that are involved here, I believe it can be shown that this idea need not be so objectionable.

Kant himself was aware of the controversial character of his claim:

> Thus as exaggerated and contradictory as it may sound to say that the understanding is itself the source of the laws of nature, and thus of the formal unity of nature, such an assertion is nevertheless correct and appropriate to the object, namely experience.[325]

There are, however, a number of qualifications and nuances to his claim. First, it should be noted that Kant uses the term 'nature' in a specific, technical sense which maybe does not coincide completely with its normal usage. Kant seems to think that nature is *by definition* law-governed – this is just what we mean by the word 'nature'. He talks about "that order and regularity in [the appearances] that we call **nature"**[326] But this law-governedness is only "formal" – it concerns merely the purported fact of the world being governed by natural laws *as such,* not what the specific content of those natural laws might be. It is only this "formal" aspect of the law-governedness of the world that is supposed to be dictated by the understanding.

> To be sure, empirical laws, as such, can by no means derive their origin from the pure understanding … But all empirical laws are only particular determinations of the pure laws of the understanding, under which and in accordance with whose norm they are first possible, and the appearances assume a lawful form…[327]

But what is this notion of nature as a law-governed whole – how is it related to our experience of the world? Do we really experience the world as one systematic whole, completely and comprehensibly governed by knowable laws? This would seem to be claiming too much, but it is equally clear that our knowledge of the world is not confined

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[324] See B159

[325] A127

[326] A125

[327] Ibid.

to mere logically atomic facts. We have a considerable knowledge of *systematic, law-like* facts about the world – we have a considerable knowledge of causal – natural – laws, at least to a high degree of approximation. It would also seem that natural science is striving towards an understanding of the world precisely as *nature* in the Kantian sense, as a *system* which is fully describable and predictable in physical terms. This is the quest for the "total theory" – the completeness of physics.

Now, this scientific world-view is hardly *necessary*. There can be little doubt that human existence is possible with a conception of the world as fundamentally capricious. Such a world-view, I take it, would be one in which superstition and ritual would be rife. Not possessing the epistemic tools to determine the efficacy of actions; authority, arbitrary association and personal inclinations would serve as practical guidance, rather than effective procedures.

It is arguable that the scientific revolution personified by Isaac Newton represents a transition precisely from a *capricious* world-view to a *law-governed* one.

It is reasonably clear from Kant's text that his notion of *experience* in the context of the analogies is precisely a notion of experience of nature *qua* a law-governed whole.

> By nature (in the empirical sense) we understand the combination of appearances as regards their existence, in accordance with necessary rules, i.e., in accordance with laws. There are therefore certain laws, and indeed *a priori*, which first make a nature possible; the empirical laws can only obtain and be found by means of experience, and indeed in accord with its original laws, in accordance with which experience itself fist becomes possible. Our analogies therefore really exhibit the unity of nature in the combination of all appearances under certain exponents, which express nothing other than the relation of time (insofar as it comprehends all existence in itself) to the unity of apperception, which can only obtain in synthesis in accordance with rules. Thus together they say: All appearances lie in one nature, and must lie therein, since without this *a priori* unity no unity of experience, thus also no determination of the objects in it, would be possible.[328]

This conception of nature as a law-governed whole, is also the flip-side of Kant's notion of science. If nature is systematic and law-governed, then it would seem that an appropriate body of knowledge about nature should also display a corresponding systematicity, and this is just how Kant defines science in *Metaphysical Foundations of Natural Science (Foundations)*:

[328] A216/B263

> Every doctrine, if it is to be a system, i.e., a whole of cognition ordered according to principles, is called science.[329]

The Analogies are *Pure*, hence metaphysical principles, and in the *Foundations*, Kant argues precisely that natural science depends essentially on the use of metaphysical principles:

> All natural philosophers who wanted to proceed mathematically in their work had therefore always (though unbeknown to themselves) made use of metaphysical principles, and had to make use of them, even though they otherwise solemnly repudiated any claim of metaphysics on their science.[330]

Now, as we have seen in the case of the mathematical Categories and experience of the world as consisting of objects with properties, we may reasonably assume that there are necessary subjective conditions for such scientific knowledge of natural laws to be possible. Kant's point must be that these subjective conditions have to do with epistemically formal constraints on any experience of natural laws.

c) How Laws prescribed by Reason make Nature Possible

Just as in the case with the claim that the mathematical Categories make experience possible, the claim that the laws dictated by the understanding makes nature possible is deceptively simplistic. I shall argue that the claim that understanding prescribes laws to nature and thereby makes nature possible, must be unpacked in the following way:

– It is an observable fact that we make judgements where we distinguish between subjective and objective time-orders of the perceptions involved in the judgements, namely in the case of transformational judgements and hypothetical judgements.

– It is a necessary condition for making transformational judgements that our sortal concepts fit into a hierarchical system of *species* and *genera.*

– The Category of Substance is the concept of the referent of the highest genus concept in such a hierarchical system.

– The form of transformational judgements is the form of judgements of objective events.

– Hypothetical judgements consist of two transformational judgements combined as ground and consequent.

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329 *Found.* p. 467

330 Op. cit. p. 472

– The Category of Cause is the concept of an event that is the subject of the transformational judgement in the antecedent of an hypothetical judgement.

– It is a necessary condition for justifying hypothetical judgements that a regulative principle of Universal Causality be implemented in our empirical investigations.

– It is a necessary, but not sufficient condition for the regulative principle of Causality to be successfully implemented that a regulative principle of the Persistence of Substance be implemented in our empirical investigations.

– The successful implementation of a principle of Universal Causality is the goal of natural science.

The remainder of this thesis will be dedicated to justifying this series of claims.

6.4 Synthetic Principles of Pure Understanding

Before we tackle the individual Analogies, we need to examine what is involved in Kant's notion of an Analogy of experience as such. The analogies are a subset of the Pure Principles,[331] and in the "systematic representation of all synthetic principles of pure understanding",[332] Kant outlines the claims that he wants to establish in the forthcoming sections. The basic point seems to be that Pure Principles are *second-order* rules of objects of experience.[333] Pure Principles do not directly apply to objects of experience, they will not directly tell you which regularities you will find in experience and they do not specify any natural laws; but they do specify what *form* a rule of experience must have. They are in essence *rules of rules* – they specify the *form* of regularities under which perceptions must fall to count as experiences of events, causes and so on. The pure principles tells us what *kinds* of rules we might encounter in experience, but do not specify the actual instances that fall under them.

> …without exception all laws of nature stand under higher principles of the understanding, as they only apply the latter to particular cases of appearance. Thus these higher principles alone provide the concept, which contains the condition and as it were the exponents for a rule in general, while experience provides the case which stands under the rule.[334]

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331 I.e. the "synthetic principles of pure understanding"

332 A158/B197

333 i.e. appearances.

334 A159/B198

So, analogous to the way that Pure Concepts are second-order concepts[335] – concepts of concepts, the Pure Principles are second-order rules – rules of rules.

a) Analogies of Experience

The three Analogies are specifications of a general principle which Kant states at the very outset of the section "Analogies of Experience". This general principle is stated in two alternative versions in the two editions of the *Critique.* The second edition (B) has:

> Their principle is: Experience is possible only through the representation of a necessary connection of conscious representations.[336]

While the first edition (A) states:

> Their general **principle** is this: As regards their existence, all appearances stand *a priori* under rules of the determination of their relation to each other in **one** time.[337]

It seems to me that these two formulations are essentially equivalent, but that they have slightly different emphasis, each one illuminating in its own right, so we should examine and compare the two.

With regard only to the specific wording, the subject of principle B is *experience*, while principle A concerns *appearances as regards their existence;* but this is no real conflict of course, since the existence – the persistence through time – of appearances is exactly what is the content of "thick" experience,[338] which must be the sense of 'experience' that is relevant here.

Principle B is concerned with conscious representations.[339] If any connection of these are to constitute or make possible experience, I take it that the conscious representations in question must be *objective* representations, in a word: cognitions. So principle B states that one can only have "thick" experience (i.e. of "weighty" objects) through representation of a necessary connection of cognitions. This is emphasised in the next paragraph, Kant's "proof" of the general principle, where he discusses

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335 See p. 174

336 B218

337 A176–7

338 See p. 142 ff.

339 *Wahrnemungen,* see p. 37.

> what is essential in a cognition of **objects** of the senses, i.e., of *experience* (not merely *intuition* or sensation of the senses).[340]

So, according to principle B, if we are to have experience, we must have it by way of representing a necessary relation of intuitions.

In principle A it is stated that appearances must be subject a priori to rules governing the *determination of their mutual time-relations.* Now, saying that appearances are subject a priori to rules is, I take it, just saying that the intuition of them stand in necessary relations. Remember that necessity is one of the sure criteria of the *a priori,* and to say that the objects of intuitions are subject to rules is obviously just a way of saying that the intuition of those objects are related in certain ways. To say that they are subject *a priori* to rules, is to say that the intuitions of them are related *necessarily.*

However, principle A gives us one important specification of the nature of the relation of intuitions in question which is missing in B, namely that the rule governs *the determination of the intuitions' relation to one another in time.* So, if we combine all of these insights we can reformulate the general principle of the Analogies of Experience in the following way:

> *"Thick" experience of "weighty" objects is possible only by way of representing some necessary temporal relation of intuitions.*

Kant's initial formulations are ambiguous, in that one might either conclude that there is *one* necessary temporal relation of intuition that is such that experience is only possible through *it,* or that each instance of experience is only possible through *some* necessary temporal relation. However, his subsequent comments shows that Kant holds the latter:

> The three *modi* of time are **persistence, succession**, and **simultaneity**. Hence three rules of all temporal relations of appearances, in accordance with which the existence[341] of each can be determined with regard to the unity of all time, precede all experience and first make it possible.[342]

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340 B218 (italics added)

341 "Existence" is replaced with "the relation of the real in appearance" in Kant's working copy of the first edition, see Kant 1998, p. 296, note g.

342 A177/B219

Since the time-relations in question are supposed to be *necessary,* they are of course just instances of the transcendental time-relations mentioned in the "Schematism",[343] so what we are looking for are *strict universal* temporal relations of intuitions. But this immediately raises the question of how we can have knowledge of such strict universality, since *that* is precisely something that would go beyond anything which experience could tell us. Part of the answer of course is the claim that experience is only possible through these rules, and if *that* is true, then we can deduce the existence of these rules from the premise that we do have experience. However, it would seem not to be a necessary truth that we have experience, so the *existence* of the rules is certainly not necessary in that sense. Kant has in mind a very different conception of necessity though, which is roughly the idea that firstly, these rules must always be assumed true at the beginning of any empirical enquiry, and secondly that they could never be falsified by experience. In this way they are both *prior to* and *independent of* experience.

So, supposing that Kant's forthcoming argumentation will be accepted, we shall know experience to be possible only through some *a priori* rule – some necessary relation, but we shall not thereby know what that rule is on each occasion. And this observation ties in with Kant's explanation of the term 'analogy'. To start with, Kant's use of the term is contrasted with its use in mathematics:

> In philosophy analogies signify something very different from what they represent in mathematics. In the latter they are formulas that assert the identity of two relations of magnitude, and are always **constitutive,** so that if two members of the proportion are given the third is also thereby given, i.e., can be constructed. In philosophy, however, analogy is not the identity of two **quantitative** but of two **qualitative** relations, where from three given members I can cognize and give *a priori* only the **relation** to a fourth member but not **this** fourth **member** itself, although I have a rule for seeking it in experience and a mark for discovering it there.[344]

This difference between quantitative and qualitative analogies can be illustrated quite clearly by a couple of examples. Let us start out with a quantitative one. Suppose we are given the following equation:

$$\frac{2}{4} = \frac{x}{6}$$

[343] See p. 153

[344] A179–80/B222

This tells us that there is something *(x)* which is related to 6 as 2 is related to 4, and by simple arithmetic we can find out that this x in fact equals 3.

A qualitative analogy, in contrast, could be something like this:

> Immanuel Kant is related to someone in the same way as Nicomachos is related to Aristotle, his father.

Which could be formalised in the following way (N=Nicomachos, A=Aristotle, K=Immanuel Kant, F(x,y)= 'x is the father of y'):

$$F(A,N) \wedge \exists x[F(x,K)]$$

Now, *this* tells us that there is someone *(x)* who is related to Kant in the same way that Aristotle was related to Nicomachos, namely as father to son. In other words we know that *someone* is Kant's father, but we do not of course thereby know *who* he is. However, and this is the crux of the matter, we *do* know what to look for: someone related to Kant in the same way as Aristotle was related to Nicomachos – we have a "mark for seeking him in experience": roughly (in Kant's day) a man living with the woman who gave birth to Kant.

As we have seen, the *relata* of the Analogies of Experience are *conscious representations*, and Kant sums up what these Analogies will tell us in the following way:

> …if a conscious representation is given to us in a temporal relation to others (even though indeterminate), it cannot be said *a priori* **which** and **how great** this other conscious representation is, but only how it is necessarily combined with the first, as regards its existence, in this *modus* in time.[345]

So far, we have no *arguments* for any of these claims about the Analogies, and the above is no more than a preliminary survey of what is to come. The analyses and arguments are presented in connection with each of the three analogies, and only by way of arguing for the truth and validity of the three Analogies will the validity of the relational *Categories* finally be justified. In the following sections, we shall look at each of the Analogies in turn.

[345] A179/B222 (Pluhar's translation modified). See also the quotation on p. 146.

To bring out what is defensible in Kant's treatment of the Analogies, I believe it is necessary critically to re-examine Kant's arguments whilst keeping the following considerations in mind:

i) To distinguish clearly between occasional and typical time-relations.[346]

ii) To distinguish clearly between those arguments that proceed from necessary conditions for any kind of complex judgements and those that proceed from necessary conditions for experience of the world as a law-governed whole.[347]

[346] See section 6.1e)

[347] See section 6.3b)

Chapter 7 – The 1st Analogy – Persistence and Substance

Kant inherits the concept of substance from the philosophical tradition, and in order to properly understand the first Analogy, our first exigency is to look somewhat closer at this notion of 'substance' itself.

7.1 The notion of substance

In the philosophical tradition following Aristotle, there are a number of inter-related aspects of the characterisation of the notion of substance:[348]

– *(Primary) substance* is that which exists by virtue of itself as opposed to properties and relations which only exist as properties or relations *of* something. This can be termed 'substance-as-inherence'.

– Substance is that which undergoes change but itself remains the same, i.e. the persistent in change. This is substance-as-persistence.

– Substance is that of which everything else can be predicated, but which cannot itself be predicated of anything else. This is substance-as-ultimate-subject.

We shall see that Kant's analysis results in a conception of substance that encompasses all of the above aspects of substance within his overall program. In reconstructing this analysis we shall start with the notion of substance-as-persistence, as that corresponds closely to the focus of the first Analogy, and see how this ties in with the other senses of 'substance'.

a) The unity of time and the unity of nature

In the 1st Analogy, Kant seeks to justify a principle of the persistence of substance as a metaphysical, hence synthetic *a priori* principle. The structure of the argument is that as a matter of fact we experience temporal unity, and that the truth of such a synthetic *a priori* principle is a necessary condition for experiencing temporal unity. However, the details of this argument are confusing to say the least.

348 See Lübcke 1993

There seems to be an important tension between two logically related arguments. In the introduction to the Analogies Kant investigates conditions for experiencing time as one-dimensional:

> Hence three rules of all temporal relations of appearances, in accordance with which the existence of each can be determined with regard to *the unity of all time*, precede all experience and first make it possible.[349]

In the 1st Analogy this is used to argue to the effect that our experience must contain something represented as absolutely persistent; otherwise we could not experience even occasional succession without violating conditions for experience of time as essentially one-dimensional. This is the argument from One Time.

In the conclusion to the Analogies, when summing up, Kant seems subtly to have shifted his ground to conditions for experience of nature as a unity:

> Our analogies therefore really exhibit the unity of nature in the combination of all appearances under certain exponents, […] Thus together they say: All appearances lie in one nature, and must lie therein, since without this *a priori* unity no unity of experience, thus also no determination of the objects in it, would be possible.[350]

This is the argument from One Nature. Throughout the actual text of the section on the Analogies it seems that the argument from One Time is dominant, whereas the summing-up implies that the argument form One Nature has been intended.

It is hard to see how the argument from One Time could be made to work, but it seems to me that an argument from One Nature could be extrapolated from Kant's writings, roughly to the effect that an a priori principle of the persistence of substance is a necessary condition for distinguishing between subjective and objective relations of succession, which in turn is a necessary condition for knowledge of the world as a law-governed whole – i.e. for *scientific* knowledge.

Kant's stated idea in the 1st Analogy is that if it were not the case that something is represented as permanent through all experience, then experience of succession as fitting into a system of one-dimensional time-relations would be impossible. The argument is roughly that if we assume the opposite, namely that some substance were to arise out of

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349 A177/B219 (my italics), see p. 182

350 A216/B263, see p. 178

nothing, then we could not explain how we could cognise this occurrence as succeeding whatever occurrence that immediately preceded it and *vice versa.*

> …if we were to allow new things (as far as their substance is concerned) to arise … then everything would disappear that alone can represent the unity of time, namely the identity of the substratum in which alone all change has its thoroughgoing unity.[351]
>
> If you assume that something simply began to be, then you would have to have a point of time in which it did not exist. But what would you attach this to, if not to that which already exists? for an empty time that would precede is not an object of perception; but if you connect this origination to things that existed antecedently and which endure until that which arises, then the latter would be only a determination of the former, as that which persists…
>
> Substances (in appearance) are the substrata of all time-determinations. The arising of some of them and the perishing of others would itself remove the sole condition of the empirical unity of time, and the appearances would then be related to two different times, in which existence flowed side by side, which is absurd. For there is **only one** time, in which all different times must not be placed simultaneously but only one after another.[352]

This argument seems to rely on at least the tacit premise that the particular succession of experiences is not directly observable. The argument would go that there is nothing within our experiences that determine how they are ordered in time – they "do not come with a time-stamp". Hence there must be something among the represented *content* that determine how they are ordered successively in time, and this again requires something to be represented as constant throughout any proper part of the sum total of our series of experiences. It is hard to see why this should be accepted. On the contrary it seems that my experiences *do* come with "time-stamps". Even when my experiences are purely subjective, as in a dream, my experiences are presented as succeeding one another, and I am able simply to remember what happened before or after what. Of course, it can often be difficult to remember exactly, and we may sometimes get it wrong, but that is due to normal imperfection of human cognitive capacities, not to experiences not being intrinsically temporally ordered. Surely, even if I were to experience the miraculous *ab annihilo* appearance of some object I would be able to answer questions of what happened immediately before the object appeared.

I am not going to offer conclusive arguments either to the effect that the argument from one time can *not* be made to work, nor to what it would take to make it work.

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351 A186/B229

352 A188–9/B231–2

Instead I shall try to reconstruct an argument from One Nature, and show how this does indeed explain why a pure principle of persistence is a necessary condition for a natural science that aspires to completeness.

7.2 Transformational judgements

The category of substance, or rather: *substance and attribute* corresponds in Kant's system to the categorical form of judgement. Now, I have argued that categorical judgements do not differ from mere intuitions in terms of transcendentally logical significance, that there is no fundamental distinction between subject concept and predicate concept in such judgements, and that consequently the distinction between substance and attribute cannot be made on the basis of categorical judgements. (See pp. 139 ff.)

However, it seems to me that there is one kind of relational judgement that is missing from Kant's table, and that *this* does indeed provide the foundation for making the necessary distinction, namely what I term *"transformational judgements"*.

Every waking hour, I, like any human knower, experience *objects undergoing changes* – transformations. Flowers wilt, the coffee cools in my cup, the cat wakes up, the telephone rings and my desk fills up with papers. Transformational judgements typically have as predicate concept a tensed verb,[353] and they all entail some kind of *change of state* of an object. It is, I take it, an undeniable fact that we do make judgements of this kind and that we believe the vast majority of them to be true. Let us take this as a premise then: that we do make transformational judgements, and let our first task be to try to effect an analysis of what is involved in the making of a transformational judgement.

Now, I argued (on p. 140) that any categorical judgements could be translated into intuitions, and that intuitions and categorical judgements thus are equivalent in terms of logical form. I shall adopt the term 'simple observation' as a generic term for intuitions and categorical judgements. It would be interesting then, to enquire whether transformational judgements too can be analysed as simple observations – to see whether transformational judgements can be translated into categorical form. I shall argue that such a translation into categorical form is not possible, but that transformational judgements can

[353] But the converse need not hold: verbs denoting *ongoing processes* need not express transformations. E.g.: 'The cat slept'. Note that the grammar of many languages distinguishes between "process verbs" and "event verbs". In English, it would in most cases be more natural to say that the cat *was sleeping,* than that the cat *slept,* and in Italian the distinction would be compulsory.

only be analysed in terms of *combinations* of simple observations – which brings them into the domain of the dynamical Categories.

Take as a specimen transformational judgement:

(16) That cup of coffee has cooled

Superficially, this seems to have much in common with a categorical judgement: 'That cup of coffee' is the subject clause, and 'has cooled' is the predicate concept. But there is a crucial difference in the predicate concept in this case. The predicate 'has cooled' is clearly not a simple predicate which can be reliably attributed on basis of a simple observation; rather 'has cooled' entails a *succession of contradictory simple predicates*, in this case: 'hot' and 'not hot'.[354] I further set forth the analytic hypothesis that *any* transformational predicate is analysable in this way, in terms of contradictory simple predicates.[355] In some cases this is explicit in constructions which express the *acquisition* of some simple predicate, such as *'grow* old', *'turn* sour' etc. In other cases the succession of contradictory simple predicates is more implicit, but then clearly specifiable by analysis, such as: 'wilt' corresponds to 'not wilted' and 'wilted; 'wake up' corresponds to 'sleeping' and 'awake' and so on.

Thus, whereas (16) could be classified as a categorical judgement by general logic which disregards the meaning of predicates, we see that from the point of view of transcendental logic, which must also take into account the possibility of knowledge by way of the predicates employed, it cannot pass muster as a categorical judgement as it stands, but must be further analysed in order to investigate its relationship with *bona fide* categorical judgements. So, it seems to me, by considerations of a judgement's role in the acquisition of knowledge, not merely its role in inferences, we must distinguish transformational from categorical judgements, just as Kant found it necessary to distinguish between singular and universal judgements.[356]

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354 *Or* it could be analysed as 'not cool' and 'cool', or else 'hot' and 'cool' and so on. To the degree that these are equivalent they are equally adequate analyses, and they all share the crucial property of being successions of contradictory predicates

355 . However, the contradictory nature of the predicates involved need not always be obvious, as in a judgement like

The atmosphere changed from chilly to frosty

The problem here is that both 'chilly' and 'frosty' are sufficiently vague so as to be in many contexts *compatible.* I will claim that in such cases, if the judgement in question is not to be meaningless, there will always be an implicit contextual sharpening of the concepts so as to make them contradictory – otherwise the judgement would not specify a *change.*

356 See A71/B96

And we can take our transcendentally logical considerations further: Since a transformational judgement is clearly an empirical judgement, we can draw upon the conclusions of section 4.1c), in particular the demand that the subject of a judgement be an object of intuition (p. 84). Let us first try to articulate what is required in terms of observation in order to make a transformational judgement, and then see what must be brought in in addition, and what conclusions can be drawn from that.

Clearly, to be able to make the judgement that (16), I must first of all perceive a suitable portion of coffee; and to affirm that it is indeed cold, I must also perceive its coolness, for example by touching its surface with my lips and perceiving its lack of heat, prompting me to utter truthfully: "That coffee is cold". This will indeed warrant my judging that the coffee is *cold*, but that is not the same as judging that it has *cooled* – nor is it entailed by it, unless one assumes that all coffee has been hot at some time, and *that* is manifestly false (you can make *café froid* by dissolving instant coffee granules in cold water, though you need to stir vigorously). To restate the point about transformational predicates in this special case: To be in a position to say that the coffee *has cooled*, it seems that I must be able to correctly ascertain not only that the coffee is *now cold*, but also that it *was hot*. This in itself poses no great problem of course, I may have observed as much at the time. Suppose that I start working at 10 am and that upon seating myself I take a sip of my freshly brewed cup of Mocha Java and so doing make the simple observation that the coffee is hot. Now, we can imagine, I become engrossed in philosophical speculation and the cup is left untouched until 12:30, when I suddenly reach for it, lift it to my lips and consequently make the simple observation that the coffee is cold. While I grant that I now have good grounds for asserting that the coffee has cooled, I submit that I have so *not solely on the basis of the two cited simple observations*. To demonstrate this, we need only envisage a story wherein I make two successive simple observations with precisely the same content as the original ones, but where this does not warrant the judgement that the coffee has cooled. Suppose I start out by pouring myself a cup of Mocha Java fresh from the percolator, immediately take a sip and make the simple observation that the coffee is hot, whereupon I distractedly leave the cup on the kitchen counter and go to work at my desk. Some time later I reach for the cup I left on my desk yesterday and make the simple observation that the coffee is cold. Now clearly, *these* two observations do *not* warrant my judgement that the coffee has cooled while I have been working. – Which coffee, in that case? The cup on the desk or the cup left in the kitchen? It might even be possible that the first cup is still hot if I accidentally left it on the hot plate which I forgot to turn off.

Since my two simple observations are not simple observations of one and the same portion of coffee, they can not warrant any judgement concerning transformations of one of them. –Yet these simple observations have precisely the same content as those in the original version of the story.[357]

To generalise: A simple observation that some A is B, followed by simple observation that some A is ¬B does *not* warrant the judgement that some A has been transformed from being B to ¬B. To make such a judgement we clearly need the further premise, that it be *one and the same A* which *was B then* and *is ¬B now*. And this condition, that one and the same object be the object of two distinct simple observations is not something that can itself be established by any simple observations. – Neither of the two observations in question will do of course, since what we want to know is the obtaining or not of some relation between them. And if we suppose a third simple observation to link them, we would obviously then need some warrant for asserting that the object of this third simple observation be the same as the objects of the first ones, and so on in an infinite, vicious regress. Nor will it make much sense to suppose that we have one simple observation of A in which both B and ¬B are asserted of it, as any attempt at expressing such an observation would simply amount to a contradiction in terms: "This coffee is hot and not hot".

My point here is *not* to try to raise some sort of sceptical worry that we may never know whether one and the same object is ever the object of two distinct simple observations, and thus that we might perhaps never be in a position reliably to make transformational judgement. Clearly, we *do* make such judgements, and though the investigation of conditions of the possibility of re-identification of objects is no doubt not without merit or interest, our ability to re-identify objects is not in question here. We clearly make such judgements every day, and in practice we do not doubt our general ability to re-identify objects. This is taken as a premise here, and we want to find out what conclusions regarding Pure Concepts that can be drawn from that premise.

7.3 The Form of Transformational Judgements

Given the analysis above, we can begin to specify some formal requirements for transformational judgements:

– They cannot be translated into any simple observation, i.e., a categorical judgement or an intuition.

[357] They may even be supposed to be phenomenologically indistinguishable.

– They consist of a subject clause and a predicate being successively attributed and negated (or *vice versa)* of an object.[358]

If we let the ellipsis (…) signify temporal succession, we can symbolise the basic form of a transformational judgement in the following way:

$$\Theta A \text{ is } (B \ldots \neg B)$$

Where 'A' is the subject concept and 'B' is the predicate concept.

We shall see presently, that all the desired consequences regarding the Pure Concept of Substance and the corresponding Pure Principle can be drawn from the premise that we make transformational judgements and this proposed analysis of their form.

7.4 The Principle of Persistence

In translating Kant's convoluted German into English, there is frequently a considerable risk of distorting points of his arguments, and in particular the first Analogy – the "Principle of the Persistence of Substance" seems to be prone to distortion.

Both the first and the second Analogy focus on *change* and closely related notions. Kant draws fine and important distinctions between these notions and in order to make sense of his arguments we too need to keep them clearly apart.

a) The ambiguity of 'change'

The English word 'change', which is used in the Cambridge translation, has an ambiguity which can be illustrated by comparing the two expressions 'the changing of the guards' and 'the guards changing'. The former suggests that one set of guard is replaced with another set, while the latter is more naturally used to denote that one and the same set of guards is undergoing some change such as growing old or changing their uniforms. The former is an *alternation* while the latter is a *transformation.* Now, in the first Analogy Kant uses the German word '*Wechsel*'[359] which unambiguously means *alternation,* i.e., a *replacement* of one thing with another. In the second Analogy, the

[358] In the simplest form this successive attribution and negation is expressed by one simple predicate, such as in 'turn sour' which involves first negation and then attribution of 'sour'. In more complex form it may involve predicates which are mutually *exclusive* or *contradictory*, such as 'to cool' which involves attribution first of 'hot', which contradicts 'cold' and then attribution of 'cold' which in turn contradicts 'hot'.

[359] Lit. 'exchange'

term *'Veränderung'* is introduced into the discussion, and Kant takes care to explicitly define it as "a successive being and not-being of the *determinations* of the substance that persists there"[360] – i.e., *transformation*. In quoting from the Analogies I shall modify Guyer & Wood's translation so as to use 'alternation' for *'Wechsel'* and 'transformation' for *'Veränderung'*.

Before proceeding any further with the discussion of the First Analogy, I believe it is helpful to quote it in full after the second edition:

> **First Analogy.**
>
> **Principle of the persistence of substance.**
>
> In all alternation of appearances substance persists, and its quantum is neither increased nor diminished in nature.
>
> **Proof**
>
> All appearances are in time, in which as substratum (as persistent form of inner intuition), both **simultaneity** as well as **succession** can alone be represented. The time, therefore, in which all alternation of appearances is to be thought, lasts and does not alternate; since it is that in which succession or simultaneity can be represented only as determinations of it. Now time cannot be perceived by itself. Consequently it is in the objects of perception, i.e., the appearances, that the substratum must be encountered that represents time in general and in which all alternation or simultaneity can be perceived in apprehension through the relation of the appearances to it. However, the substratum of everything real, i.e., everything that belongs to the existence of things, is **substance**, of which everything that belongs to existence can be thought only as a determination. Consequently that which persists, in relation to which alone all temporal relations of appearance can be determined is substance in the appearance, i.e., the real in appearance, which as the substratum of all change always remains the same. Since this, therefore, cannot alternate in existence, its quantum in nature can also neither be increased nor diminished.[361]

It is also useful to note the formulation of the principle that is given in the 1st edition:

> All appearances contain that which persists **(substance)** as the object itself, and that which can change as its mere determination, i.e., a way in which the object exists.[362]

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360 B222 (italics added)

361 B224–5

362 A182

b) The claim and its proof

As usual, Kant's argumentation is quite dense and confusing, so I shall adopt the strategy of first trying to elucidate the claim, and then give independent arguments in its support, tying this in with points from Kant's text as and when it is relevant.

First of all, then, we need to establish exactly what the Principle of Persistence claims. Significantly, the Principle is presented as a conjunction of *two* sub-claims:

(1) Substance persists through all alternation of appearances
(2) The "quantum" of substance is never increased or diminished in nature.

We shall see that while (2) does not exactly *follow* from (1), the justification of the former is nevertheless vital to establishing the latter. In this regard, we should first of all bear in mind that the Analogies are analogies *of experience* – that they are supposed to be universally valid for all possible experience, but specifically *not* for things in themselves independent of experience. The sub-claims are claims about what could count as a possible experience for us, on what might or might not be possible beyond that, we can give no verdict. The principle of persistence is thus *not* making a transcendent metaphysical claim to the effect that *of that which we call substance* it is true *(de re)* that there is no possible world in which *this* could increase or decrease in quantity. Rather, the claim is that it is impossible for us to have an experience *as of* the increase or decrease in the quantity of whatever we term 'substance' in nature (2), and that it is impossible for us to have an experience *as of* the alternation of substances, not merely of appearances (1).

To examine this claim we shall start out by looking at the kind of judgements of temporal change that we routinely make, namely *transformational judgements*, the form of which was discussed on p. 194. First, we shall see that from this we can derive both a notion of substance-as-ultimate-subject and the beginnings of a notion of substance-as-persistence;[363] next that no transformational judgement could constitute experience of arising or perishing of substance. Thereafter we need to show in addition that *not only* could we not experience an arising or perishing of substance by way of a transformational judgement, but moreover, we could not experience the alternation of substance in any other way *either*. My strategy will be to try to show that nothing could *count as evidence* for a judgement of the arising or perishing of substance.

[363] See p.186

c) Transformational judgements and The Ultimate Subject

One of the standard definitions of substance is as that which can be thought of as subject only and never as mere predicate. This idea is most clearly expressed in *the Critique* just prior to the Transcendental Deduction where Kant explains the relation between intuitions, the logical functions of judgement and transcendental logic:

> Through the category of substance …, if I bring the concept of a body under it, it is determined that its empirical intuition in experience must always be considered as subject, never as mere predicate…[364]

But we need some further elaboration of this notion of substance in order to appreciate its connection with the present concerns. Prior to that, however, I should like to warn about, and hopefully fend off, one initially tempting but ultimately misleading way of thinking of the notion of substance:

As we are discussing the possibility of or otherwise of the arising or perishing of substances, it might be tempting to think of substances as a particular *kind* of entity, possessing the unusual property of being indestructible and uncreatable. It seems that *atoms* or *elementary particles* can be thought of in this way, and one might then be tempted to identify these with substances. This is in effect to try to determine substances as one kind of entity in distinction from others, and it seems not implausible to construe one of the aims of physics to be the discovery of these.

There are, however, several reasons why this cannot be a correct view of the Kantian notion of substance. For one thing the supposed impossibility of the arising and perishing of elementary particles is clearly *physical*[365] – there is no *logical*, general or transcendental, nor *epistemological* reason why one could not witness the destruction or creation of elementary particles. But more conclusively, it quickly becomes clear from textual considerations, that a "physical" interpretation of the notion of substance such as outlined above is wholly inappropriate as an interpretation of Kant: We should remember that in being the subject of a categorical judgement (or on my revised story: a transformational judgement) an object is *ipso facto* brought under the category of substance; which is to say that *any object* capable of being the subject of such a judgement also falls under the concept of substance. And any and every knowable of object is of course capable of being the subject of such a judgement, as it is precisely

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[364] B129

[365] If indeed such an impossibility exists at all. What passes as elementary particles in current physics are at any rate all to destructible, witness particle accelerators and suchlikes.

through such judgements that we acquire knowledge of objects,[366] which again entails that any and every knowable object falls under the concept of substance. So 'substance' cannot be a concept that picks out a particular class of entities;[367] rather it must be a *particular conception* of things in general.

So, in enquiring into the nature of substance, we are not looking for a class of *entities* that can only be thought of as subject and never as mere predicate; rather we are looking for a *concept* or class of concepts that can appear as subject only and never as mere predicate. Now, if we think about things by way of concepts, and if there are in fact such a concept (or concepts) which can only appear in judgements as subject, it would seem fair to say that whatever is represented by that concept is that as-yet-unknown which can be thought as subject only – and 'substance' is just a name for this as-yet-unknown.

This then, raises two questions:

(a) Why should we believe that there is such a concept (or concepts) which can only appear in a judgement as subject, never as predicate?
(b) Assuming there is such a concept, why could we never experience an arising or perishing of that which the concept represents?

Note that in answering these two questions, we shall also be providing justifications for the two sub-claims of the Principle of Persistence. This will hopefully become clearer below.

7.5 That concept which can be thought as subject only

We shall start with the first of these two questions and seek to justify the claim that there must be a concept which can only appear in a judgement as subject and never as predicate. We should remember that we are now engaged in conditions of "thick" experience, namely temporal relations between mere observations, which means that we

366 My insistence on the need for transformational judgements rather than merely categorical ones might seem to be slightly more restrictive than Kant's original claim, but it is still clearly the case that any entity in so far as it is capable of change – of transformation – falls under the concept of substance. And it seems to me that it must be at least logically possible for any and every object to change.

367 Which should not be surprising. If this were to be the case, one would assume that an *empirical deduction* would serve as an adequate validation of the concept of substance. See p. 66.

are entitled to restrict ourselves to judgements involving references to time – in a word: transformational judgements.

I argued (on p. 194) that a transformational judgement consists in a categorical judgement and its subsequent negation with the proviso that the subject be the same in the two categorical judgements. This should mean that all conditions for categorical judgements must also be conditions for transformational judgements (but not necessarily *vice versa)*. Now, we saw in section 4.1e) that the subject concept of a basic empirical judgement must be a sortal concept.[368] Consequently, non-sortal, i.e., *qualitative* concepts cannot be subject concepts of transformational judgements, but must always be thought as predicates only. This, however, is the converse of what we are after, namely the supposed concept which can only occur as subject, never as "mere" predicate. It is clear from the above that this must be a concept which is capable of being used sortally, but which one?

The problem is that it seems that for any concept occurring as the subject concept in a categorical judgement, we can think of another possible judgement of which that concept is the predicate. For instance, "That stallion is black" is a possible judgement, but "that horse is a stallion" is equally possible; "Socrates is mortal", but "that man is Socrates"; "that sweet fruit is an apple", but "that apple is a sweet fruit" and so on and so forth.

However, if we bring in the further restriction of looking at *transformational* judgements, we can make some headway. Let's take a reasonably straightforward example of a transformational judgement:

(17) Those flowers wilted

Now, we want to know whether the subject concept, 'flower', could appear also as the predicate of a transformational judgement. Remember, a transformational judgement involves a predicate being subsequently affirmed and denied or *vice versa* of something. At first sight, we might suppose that such a judgement is:

(18) Those buds have blossomed

[368] See p. 89

(I take it that 'to blossom' means 'to become a flower', so that 'blossom' signifies the successive non-being and being a flower.)

(18) seems at first sight to be a perfectly decent transformational judgement, but I shall claim that there is more to this judgement than meets the eye.

First, let us examine in what circumstances such a judgement could be made: If we assume that the judgement be true, it is clear that it could not be made by the judger pointing to or otherwise indicating a bunch of buds and claiming of them that they have blossomed; because if they truly have blossomed, then they are by that very fact no longer buds, hence there are no longer any *buds* there for the judger to indicate by the subject phrase 'those buds'. In fact, 'those buds' could only enter into a discourse as anaphora for 'the buds I described earlier' or some such sort of descriptive phrase. So then, in asserting that those buds blossomed, what are we asserting? Clearly we are asserting that previously, in some location specified by context and/or indication, there were some buds, whereas now there are some flowers; but there has to be more than that. If someone were to cut the buds off a rosebush and then glue on some flowering roses from elsewhere, we would clearly have a case where there used to be buds, and now there are flowers; but that would *not* be a case of the aforementioned buds blossoming – becoming flowers. For *that*, something more is required, and here we might find ourselves wanting to say that in such a case it is *the very same buds* that we saw earlier, which are now flowers, hence no longer buds – but that is absurd. They can't both not be buds (because they are flowers) and at the same time be buds (i.e., *the very same buds* as the ones before). If they are not buds at all, how could they be the very same buds? That is like saying that this man is the very same horse that I saw yesterday.

But exactly what then *are* we asserting? Clearly we *are* sometimes able to say truly that these buds *will* one day blossom – those flowers *did* grow from buds. The answer is quite simple, of course, and the discussion above does admittedly have an air of sophistry. What we mean by saying that those buds blossomed is simply that the very same *things* which were once buds are now flowers. By way of a more general concept which subsumes both buds and flowers we are able to think of the blossoming as a transformation of a persisting entity, and it is this that allows us to conceive of the idea that it is *the very same part of the plant* which *used to be* a bud and *is now* a flower. In order to be able to distinguish between cases of a replacement of some things which happen to be buds with some *other* things which happen to be flowers from cases of buds genuinely growing into flowers, we need to avail ourselves of a sortal concept which is compatible both with being a bud and with being a flower – e.g. 'part of a plant'.

So, now we have found at last a canonical transformational judgement, where 'flower' is the predicate:

(19) That part of the plant grew from bud into flower

But what about the subject concept of *this* judgement – 'part of a plant'. We must now continue our quest, and ask: Could that concept in turn appear as the predicate of a transformational judgement?

And yes, it seems that it could. We believe that the biomass of a plant is derived from the soil wherein it is growing,[369] and in a controlled experiment in a terrarium we might be able to judge, say, that a certain amount of soil turned into the stem of the plant; or to use the canonical notation:

(20) That mass of matter was transformed from soil into a part of the plant

But now, we seem to have reached a limit: It seems hard to imagine a possible judgement to the effect that something which did not consist of matter now does or *vice versa.* Even though matter can be transformed, and a certain mass of matter can partly or wholly constitute very different things, we do not seem to believe that anything could be turned into matter, nor that any thing which is already matter could cease to be matter.[370]

Let us take this at face value, initially: If it really is the case that we have reached a limit, that seems to entail that there has in some sense been a *direction* to our quest for ever new transformational judgements where the subject of the earlier appeared as predicate of the later. In other words: there seems to have been a *structure* to the possible combinations of concepts into meaningful transformational judgements. To make 'flower' the predicate of a transformational judgement, we needed a *more general* concept as subject, namely 'part of a plant'. I take it that saying that 'part of a plan' is a more general concept than 'flower' *just is* to say that a part of a plant may or may not be a flower, but a flower *cannot but* be a part of a plant. Similarly a mass of

369 *Plus* moisture and gases from the air, but for the sake of simplicity, we can disregard these for the moment – the argument would still go through *mutatis mutandis*

370 Modern physics complicates this by teaching that *energy* can turn into matter and *vice versa.* This will be discussed further below.

matter may or may not be a part of a plant, but a part of a plant cannot but be a mass of matter.[371]

So, by appealing to our intuitions about what could be a possible transformational judgement (and thus exploiting our implicit knowledge of the intensions of concepts) we can come to realise that sortal concepts stand in *relations of generality and specificity*, and that these relations determine their possible combinations in possible transformational judgements.

The existence of this system of relations between concepts plays an important part in Kant's philosophy in general. For one thing, it is necessary to explain analytic knowledge, and as we are about to see, it is essential to the explanation of the categories. We shall therefore pause briefly at this point to look at the backdrop to this notion of an interrelatedness of concepts, which we find in Kant's *Logic*.

a) Generality and specificity of concepts

I take it that we do not need to appeal to experience in order to realise that nothing could be both flower and bud (in the senses used above). Being a flower *entails* not being a bud and *vice versa*. Similarly nothing could be a flower and fail to be part of a plant. (Even if cut and placed in a lapel, the rose is still part of a plant, albeit *detached*). It is not just that *so far* we have not come across any exceptions to these – we seem compelled to assert that there *could not possibly* be any such. Research projects to search the rainforests for blossoming flowers which are still buds would scarcely receive funding.

Clearly, we have some knowledge of compossibility of subsumption under various concepts which goes beyond experience. Kant's explanation for this – which is not too controversial – is that we have (at least tacit) knowledge of the *intensions* of concepts. As mentioned (on p. 47), concepts' extensions are the parts of the world to which the concepts are correctly applicable. These extensions may overlap in various ways: more than one concept may, and normally will, be applicable to any given part of the world. Thus, we should expect it to be the case that sometimes the extension of one concept, say

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[371] The need for the subject concept to be more general than the predicate concept(s) in a transformational judgement follows reasonably straightforwardly from the idea that a transformational judgement consist in the subsequent attribution and negation or vice versa of a predicate of an object. A few examples might clarify the principle:

– Form a logical point view a person can change its sex, while remaining the same person.

– The leopard *can* change its spots; but it could not *qua* leopard change its species.

(However, species-changers are not logically inconceivable, and indeed they figure in various folk-tales, myths and legends, like stories about werewolves. In such stories it is the very same *werewolf* who was a man yesterday and who is a wolf under tonight's full moon. *Qua* werewolf he changes his species.)

'P', will lie totally within the extension of another concept, say 'Q' while the extension of 'Q' does not lie totally within the extension of 'P'. If this is the case, then it is true that all P's are Q's. On occasion this will clearly be something we come to believe based on experience, when we generalise from observed cases – like our belief that all ravens are black. Sometimes, however, we seem to know truths of this form independently of experience, for instance: 'All bachelors are men', and it is reasonable to assume that we know this in virtue of knowing how these concepts should be applied to the world – knowing criteria of their application.[372] Knowledge of that which determines to what part of the world a concept should correctly be applied, is termed knowledge of the *intension* of a concept. Thus this account assumes the existence of *intensions* of concepts and that these determine the *extensions* of concepts, which is to say that sameness of intension entails sameness of extension, but not *vice versa*. For present purposes it will remain totally open *what* the knowledge of intensions amounts to, or *how* it is possible to know the intensions of concepts. We shall only take it that intensions determine extensions, and that knowledge of intensional relations of concepts will yield knowledge of extensional relations independently of experience. In non-technical terms this amounts to saying no more and no less than that if I know the meaning 'bachelor' and the meaning of 'man' I can know that if there are any bachelors, they are all men, without needing recourse to experience.

Now to the distinction between more and less general concepts, which in Kant's terminology is the same as that between *higher* and *lower* concepts. The definition of this relation is simply that if *by virtue of the intensional relations* between two concepts 'P' and 'Q' the extension of 'P' falls wholly within the extension of 'Q' and the extension of 'Q' does not fall wholly within the extension of 'P', then Q is a higher concept with respect to P and P is a lower concept with respect to Q. The italicised clause is inserted to exclude cases where the extensional relations are due to purely contingent facts – 'black' is not a higher concept than 'raven'.[373] If the extensions of two concepts fall wholly without each other, yet both fall wholly within the extension of a higher concept by virtue of their intensional relations, then those concepts can be said to be 'co-ordinate' concepts. Note that 'higher' and 'lower' are purely relative terms. This relation of

[372] Though there is no claim that these criteria must necessarily be capable of being made explicit either by the subject possessing the competence or in principle.

[373] –which is not to claim that it is a *lower* concept. 'Higher' and 'lower' as applied to concepts are *contraries*, not *contradictories.*

higher and lower concepts is the same as that between *species* and *genus.* The above claims are summarised clearly by Kant in his *Logic:*[374]

> **§7. Intension and Extension of Concepts**
>
> Every concept, *as a partial concept,* is contained *in* the representation of things; as a *ground of cognition,* i.e. *as a characteristic,* it has these things contained *under it.* In the former regard, every concept has an *intension;* in the latter, it has an *extension.*
>
> Intension and extension of a concept have an inverse relation to each other. The more a concept contains under it, the less it contains in it. […]
>
> **§8. Magnitude of the Extension of Concepts**
>
> The more things stand under a concept and can be thought through it, the larger its extension or *sphere.* […]
>
> **§9. Higher and Lower Concepts**
>
> Concepts are called *higher (conceptus superiores)* so far as they have other concepts under them, which in relation to them are called *lower* concepts. A characteristic of a characteristic – a *distant* characteristic – is a higher concept; the concept in reference to a distant characteristic is a lower concept. […]
>
> **§10. Genus and Species**
>
> The higher concept in regard to its lower concept is called *genus,* the lower in respect of its higher, *species.*
>
> Just as higher and lower concepts, so the concepts of *genus* and *species* are also not different by their nature but only in respect of their relation to one another in logical subordination *(termini a quo* or *ad quod).*

Note that it is not claimed that all concepts stand in relations of higher and lower to each other. For instance, there seems to be no sense in asking which concept is the higher of 'yellow' and 'acidic'. Indeed in the case of qualitative concepts it seems that the relation of higher and lower is not prevalent,[375] but the case is different with sortals and substance concepts. Our conceptual grasp of our world is permeated with concepts that fall into precisely such relations. Biology is scarcely conceivable without the elaborate

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[374] In my presentation I have weakened those claims which seem inessential to the arguments of the Transcendental Deduction, so as to keep the premises as uncontroversial as possible.

[375] Though one might use the subordination model in saying for instance that 'red' and 'green' are co-ordinate concepts, and both subordinate to the higher concept 'coloured'. We have to draw some fine distinctions between the concepts of 'colour' and of 'coloured' though, and I am not sure what is the correct analysis in these cases. Anyway, nothing will rest on any claims about subordination or lack thereof of qualitative concepts.

classificatory systems of classes, orders, families, genera and species; and likewise in chemistry the *systematic division* of chemical substances seems indispensable.

b) Summary – conclusions from the analysis of transformational judgements

We have now reached a convenient stage to summarise the results we have reached so far:

We have seen that it is a necessary condition for making transformational judgements that our concepts stand in relations of generality. This is needed in order to specify what it is that stays the same – what *persists* in a transformation; and this again is needed in order to distinguish between cases where something *is replaced by* something else from cases where something *changes into* something else. If our concepts did not stand in relations of generality, we would not be able draw this distinction, but we *are* clearly able to draw the distinction (witness the example of roses being glued onto the stems where the buds used to be as opposed to the buds blossoming), so by *modus tollens* we are entitled to infer that our concepts do indeed stand in such relations. This then is an example of a necessary condition for the possibility of experience – in this case for the possibility of experience of *change,* through transformational judgements.

Having established the case for a systematic relation of generality among our concepts, we can finally approach the drawing of the conclusion to the existence of a concept that can only occur as subject. First we can sharpen the results of the discussion about judgements about flowers and parts of plants. This discussion suggested that there are certain necessary generality-relations among the concepts in a transformational judgement. As no part of the argumentation was premised on the specific nature of the change taking place, I believe that we are entitled to generalise from this that *any* judgement of something being transformed into something else can be brought into canonical notation (i.e. ΘA is [B … ¬B]) by way of a more general – a higher – sortal concept. This can be sharpened into a Principle of Transformation:

> If a sortal concept P is to be used as a predicate concept in a transformational judgement whose subject concept is S, then S must be a higher concept than P.

Further, we saw that the subject concept of one transformational judgement could figure as the predicate concept of another only if we could find some higher concept of which to predicate it. So we went looking for ever higher concepts: ‘Bud’/‘flower’, ‘part of a plant’, ‘mass of matter’. But this “conceptual ascent” has to end somewhere, else we would have to allow an infinity of concepts (and how could that be grasped by a finite

human mind?); *or* we would need a circularity of concepts, but that would entail that the generality relation was not transitive, which it clearly is.[376] We must therefore be able to reach a *highest concept*. In Kant's words:

> When we think a series of several concepts subordinated to one another … we can here obtain ever higher genera, for every *species* is always to be considered as a *genus* in respect of a lower concept, e.g., the concept *learned man* in respect of the concept *philosopher* – until we lastly come to a *genus* that cannot again be a *species.* And to such a one we must at last be able to come, because there must be in the end a highest concept *(conceptus summus)* from which as such no further abstraction can be made without making the entire concept disappear.[377]

Now, if we combine this with the Principle of Transformation, we can conclude that such a highest concept cannot appear as predicate of a transformational judgement, because there is no higher concept of which it could be predicated. But that is just the definition of the substance concept that we started out with, so the substance concept must be identical to the highest concept.

So, at last we have answered the first of the questions on p. 198, why there must be a concept that can occur as subject only, never as mere predicate: Because the making of transformational judgements requires a structure to our concepts, such that there is a highest concept which cannot appear as predicate. This concept is termed 'the substance concept', but so far, we do not know *which* concept it is – we do not know its empirical content.[378]

Nevertheless, we can now begin to answer the second question, why there could not be an experience as of the arising or perishing of substance: Because the substance concept can only occur as the subject concept of a transformational judgement and the subject concept denotes *that which persist – stays the same* – through a transformation, it is clear that no change of substance – no increase or decrease in amount of substance, no arising or perishing of substance – can be known through a transformational judgement. Thus, throughout all known transformation, the amount of substance must necessarily

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[376] If 'animal' is a higher concept than 'horse', and 'horse' is a higher concept than 'mare', then 'animal' is higher than 'mare'.

[377] Log. §11 n.

[378] –save for the fact that we suggested tentatively on p. 200 that 'matter' *seemed* to be a concept, the extension of which we could not conceive of as arising or perishing. More of this later

stay the same. This now, is a partial justification of Kant's conclusion towards the end of the chapter on the First Analogy:

> Transformation can therefore be perceived only in substances, and arising and perishing per se cannot be a possible perception unless it concerns merely a determination of that which persists, for it is this very thing that persists that makes possible the representation of the transition from one state into another, and from non-being into being, which can therefore be empirically cognized only as changing determinations of that which lasts.[379]

This, however, is not yet enough, it seems to me. Granted, we could not know of the arising or perishing of substance through a transformational judgement. But are transformational judgements the only means by which we can apprehend change? – Why should it be *impossible* for us to experience substance "appearing out of nowhere" or "vanishing without trace", supposing for the sake of argument that this were to happen?

This challenge must, and indeed can, be met, I think; and we shall see that it ties in intimately also with the concerns of the Second Analogy.

7.6 The regulativity of the Principle of Persistence

As we have seen above, according to Kant's First Analogy of Experience, it is impossible for us to have an experience as of the arising or perishing of substance. Because substance is that which is thought as the ultimate subject of any transformational judgement, it is clear that no transformational judgement could constitute experience of the arising or perishing of substance. But that does not in any obvious way by itself rule out the possibility of *simply observing* such a substantial alternation. It seems perfectly easy to imagine objects miraculously appearing, so why should such an experience be impossible?

Kant does give some arguments to this effect, but in my opinion they are unfortunately rather inconclusive, if not to say downright weak. Partly this is due, I think, to his failing to distinguish sufficiently between *typical* and *occasional* time relations, which I mentioned in section 6.1e). In the introduction to the Analogies section this distinction figures, but by the time he gets around to arguing for the individual Analogies, the distinction is largely absent. In addition I believe that the weaknesses in the arguments for the Analogies is due to Kant's still relying partly on the

[379] A188/B231

Transcendental Aesthetic. I do however, believe, that arguments *can* be given which are not subject to these weaknesses, and that these are related in interesting ways to Kant's own arguments and examples. But before we turn to that discussion, we need to get a little clearer about just what is and isn't claimed.

The Principle of Persistence is one of three "Analogies of Experience" which in turn form one of four groups of "synthetic principles of pure understanding". These synthetic principles are supposed to pertain to all and only possible experience, while the Analogies are said to be *regulative principles* so pertaining. It should be instructive then, to determine what exactly is meant by a "regulative principle", and in precisely what way it is supposed to pertain to experience.

a) Constitutive and regulative principles

In the section explaining the notion of analogies of experience as such, preceding the treatment of the three individual analogies, Kant explains the difference between the first two groups of principles, the mathematical, and the last two groups, the dynamical:

> …they [the Analogies of Experience and the Postulates of Empirical Thought] are only regulative principles, and […] they differ from the mathematical principles which are constitutive…[380]

So, the Analogies are *regulative* principles, in distinction from the mathematical principles (Axioms of Intuition and Anticipations of Conscious Representation) which are *constitutive.*

I am not here going to go into the specifics of just *how* the mathematical principles are supposed to be constitutive or how that is or could be justified; but it may be helpful to dwell slightly on the very notion of constitutivity itself, in order that we may contrast it with the regulative nature of the Analogies.

It is initially tempting to see Kant's distinction between constitutive and regulative principles as coinciding with the distinction between *analytic* and *synthetic* propositions. It is easy to see how an *analytic* principle would be constitutive: For instance, it seems analytically true that every effect has a cause – that is just part of what it *is* to be an effect, part of the meaning of the word 'effect'. This also fits well with Kant's characterisation of the mathematical principles as unconditionally necessary.[381] True, analytic principles are broadly logically necessary which could well be termed 'unconditionally necessary'.

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380 A180/B223

381 See p. 208

However, both the mathematical and the dynamical principles are expressly presented as *synthetic* principles. They are all treated in the section "Systematic representation of all synthetic principles". Kant is also unequivocally clear that analytic principles could never figure in metaphysics. In an appendix to the *Prolegomena,* criticising the then current state of metaphysics, Kant writes:

> Let the concepts of substance and of accident be ever so well analyzed and determined; all this is very well as a preparation for some future use. But if we cannot prove that in all which exists the substance endures and only the accidents vary, our science is not the least advanced by all our analyses. Metaphysics has hitherto never been able to prove *a priori* either this proposition or that of sufficient reason, still less any more complex theorem such as belongs to psychology or cosmology, or indeed any synthetic proposition. By all its analyzing, therefore, nothing is affected, nothing obtained or forwarded…[382]

It seems clear that Kant holds (rightly in my opinion), that there is no metaphysical mileage to be made solely from considerations of the meaning of terms – from conceptual considerations. For this reason, I must disagree for instance with Graham Bird, who seems to hold that the principles of the Analogies are a kind of conceptual truths:

> Kant's argument is only that the concept of an event presupposes that of a cause in general, and not that a particular recognition of an event requires us to have discovered the particular cause. […] The relation between the notions of a cause and an event is simply of a conceptual kind …[383]

So the challenge is to make sense of how a principle can be constitutive and yet not be analytic – rest on the meaning of the terms involved. My suggestion is that constitutive principles follow not from the *meaning* of the terms, but from the actual (and contingent) application criteria we happen to use to determine which instances to subsume under the terms in question. This idea can best be illustrated by an example:

Suppose for the sake of argument that being an elector for the Norwegian parliament is constituted by being in possession of a valid Norwegian passport. The possession of the valid passport is the *criterion* by which the electoral status is determined – by being in possession of a valid passport one is *ipso facto* an elector. Thus, all and only genuine electors for the Norwegian parliament will necessarily be in possession of a valid

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382 *Proleg.* p.368

383 Bird (1962), p.161–2

Norwegian passport; we will need no census of the population to determine this – no recourse to experience. Now, as a matter of fact a Norwegian passport has the form of a small, red booklet. Given this fact, we can know that all genuine electors for the Norwegian parliament must be in possession of small, red booklets.

This then, is an example of a constitutive, but not analytic principle:

> All genuine electors for the Norwegian parliament, will, insofar as they are genuine electors thereof, be in possession of small, red booklets.

And given the fact of Norwegian passports being small, red booklets, this will be valid for all possible experience, hence necessary. However, being in possession of a small red booklet is no part of the meaning of the term 'elector for the Norwegian Parliament', and it is important to note just what kind of necessity is being claimed here. The necessity is clearly not logical, and there are of course possible worlds in which genuine electors of the Norwegian parliament are not in possession of small, red booklets; so the necessity is not "metaphysical"; but given the way that *we* – rational beings in *this* world – determine electoral status and the form in which we actually issue passports, the principle holds for all experience we may have in this world.

In the case of a valid constitutive principle, any entity of the class falling under the principle will in virtue simply of being such an entity conform to the principle. Hence there is no difficulty in understanding why the principle must apply to all possible experience (which is not to say that there will be no difficulty in establishing the validity of the principle in the first place, of course).

However, the Analogies (and the Postulates) are not claimed to be constitutive, but "merely regulative". As the term suggests, a regulative principle of understanding is one which *regulates* – guides the understanding, and as we are here dealing with synthetic principles of *pure* (i.e., *a priori*) understanding, these principles must be ones that are not derived or derivable from experience, but which have some kind of valid claim to going beyond *current* experience, and extend rather to all *possible* experience.

Let us enumerate some demands this makes of a legitimate *a priori*, i.e., pure regulative principle:

i) It must be one which in some sense *guides* our enquiry, determines "which way to go" when experience alone does not provide conclusive reasons for choosing to go one way rather than the other.
ii) As the Pure Principles are supposed to be yielded by the Categories' application to appearances and to give principles of the possibility of experience, (see p. 148) a pure regulative principle must somehow be a condition for (our kind of) experience, or follow logically from such conditions.

So, one way to elucidate a notion of pure regulative principles, would be to show first that in empirical investigations certain guiding principles are always assumed – that there are certain *presuppositions* always and necessarily made in our quest for empirical knowledge, and that (our kind of) experience would not be possible without these assumptions; second that these guiding principles are not automatically satisfied by any mere cognition of objects *qua* objects of a certain kind or kinds; and thirdly that these assumptions are such that nothing could count as their empirical falsification (else their empirical validity could not be ensured). The pure regulative principles, then, formulate necessary conditions, not for the *existence* of objects, but for *experience* of objects.

To sum up: constitutive principles concern necessary conditions for determining the *existence* of entities *qua* the kind of entities specified in each principle, while regulative principles concern necessary conditions for the *experience qua the kind of experience specified,* of entities.

This is, I think, essentially what Kant has in mind when explaining the difference between the mathematical and the dynamical principles:

> Hence the principles of the mathematical use will be unconditionally necessary, i.e., apodictic, while the principles of the dynamical use, to be sure, also carry with them the character of an *a priori* necessity, but only under the condition of empirical thinking in an experience, thus only mediately and indirectly; consequently these do not contain the immediate evidence that is characteristic of the former (though their universal certainty in relation to experience is not thereby injured).[384]

So, the Kantian claim in the Analogies is in short that there are three interestingly related necessary presuppositions always made in experience; further that these presuppositions cannot be empirically falsified, and that they each make possible a kind of judgement of temporal relations, so that knowledge of time in this sense depends upon these principles.

[384] A160–1/B199–200

> This **synthetic unity** in the temporal relation of all conscious representations, **which is determined *a priori,*** is thus the law that all empirical time-determinations must stand under rules of general time-determinations, and the analogies of experience, with which we will now deal, must be rules of this sort.[385]

Note that Kant here, in the introduction to the Analogies section makes explicit the distinction between "empirical" and "general" time-determinations. I take it that this must amount to the distinction between occasional and typical time-determinations that was treated in section 6.1e) insofar as any single empirical time-determination must be a determination of a particular sequence of appearances. Of particular interest here is the entailed claim that all incidental time-determinations must stand under typical ones. We shall see below that this provides us with important clues towards the understanding of the Analogies.

But before that we need to establish the claim that pure regulative principles in the form of necessary presuppositions are always employed in experience, and that they are of the requisite kind. A prudent strategy for making this case would be first to point out familiar instances where these principles are brought to bear, showing *that* such principles exist, second to show *how* these principles work, then to explain *why* these principles form necessary conditions for (our kind of) experience.

I shall follow this strategy in some detail with respect to the first Analogy – the Principle of Persistence. Hopefully, this will have a bearing also on the understanding of the following two Analogies, so that these may be dealt with somewhat more briefly. To a certain degree Kant also follows this strategy, so we shall have occasion to draw upon the *Critique* as and when appropriate.

I believe that Kant is right in pointing out that regulative principles are in fact at work in ordinary as well as scientific experience, and that they do make us believe that material objects cannot appear or disappear save by way of the matter of which they are composed being transformed, which entails that *matter cannot arise or perish*.

> I find that at all times not merely the philosopher but even the common understanding has presupposed this persistence as a substratum of all change in the appearances, and has also always accepted it as indubitable […] But I nowhere find even the attempt at a proof of this so obviously synthetic proposition…[386]

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385 A177–8/B220

386 A184/B227

This, I think, is completely correct. We do find it impossible to imagine matter disappearing without a trace or appearing out of nowhere,[387] yet it is profoundly puzzling why we do so. Take the sheet of paper on which this sentence is written. We do not think it could vanish without a trace, but why? There is no *logical* reason – no contradiction is involved in stating that some material thing be annihilated, nor in claiming that it appear *ab annihilo*. This is just Kant's point in remarking on the "obviously synthetic" nature of "the proposition". Yet Kant seems to be perfectly right in pointing out that the principle "*Gigni de nihilo nihil, in nihilum nil posse reverti*"[388] is at least *psychologically* indubitable. But why?

To bring out our conundrum as clearly as possible, let us invoke a thought-experiment where to all appearances a material object does disappear, and enquire how a rational agent would and should react in such circumstances.

Enter *Jones and the Mystery of the Missing Apple:*
Imagine Jones sitting at his desk, a sheaf of papers in front of him – cup of coffee to his right and a sweetly tempting ripe red apple to his left. Yielding to his desire to feel the succulently satisfying flesh between his teeth, he extends his left hand anticipating the cool touch of Royal Gala; but just as he fixes his gaze upon the object of his desire, there is a sudden mute "whoosh!" of air rushing in to fill an apple-shaped space, and the apple is no longer there, the vacant saucer its sole sad memento.

Now, should Jones in such circumstances conclude that an apple had substantially disappeared from the world?

First, let us try to imagine what Jones' reaction *would* be: I venture to suggest that his first reaction would be to look under the desk for the missing apple, then behind the chair and, finding no trace of it, to conduct a thorough search of the entire room; and even after having searched the room thoroughly more than once, he would be reluctant to believe that the apple would be nowhere to be found. Indeed, we can easily imagine him increasingly frustrated muttering under his breath: "It must be here somewhere – it couldn't just disappear!"

Now, whence this last assertion? Jones has just witnessed the disappearance of an apple, has he not – why does he not believe his own eyes? Jones belief that the apple could not just disappear seems to be just the application of the Principle of Persistence to

[387] Note how even the verbal expression of this forces us towards thinking of 'nowhere' rather as a kind of somewhere from which something could appear.

[388] Nothing comes out of nothing, and nothing can revert into nothing.

an actual case, but whence that principle? The description of the case of Jones and the missing apple, which could be endlessly varied, was meant to illustrate that *as a matter of fact* we do employ something like the Principle of Persistence in our day-to-day dealings with the world. In a way it seems perfectly appropriate to admonish the child not to give up that search for the missing marble, because it *has to be somewhere,* it *could not* simply disappear. But saying that we do in fact employ such a principle is not proving that we are justified in doing so, of course, nor does it explain whence the principle is derived.

The most immediate way to try to explain the origins of this principle might be to say that it is derived from experience: Jones has had plenty of experience with apples, and never has he known any of them to disappear without a trace; and neither has any of his fellow apple-appreciators, so it seems to be a fair conjecture that as a rule, apples do not disappear. Therefore, he is reluctant to believe this one unprecedented apparent exception to the rule. Isn't that just perfectly straightforward induction? Why assume that anything more than generalisation from experience is involved?

Well, mainly because experience does *not* give us reasons to believe that things do not just disappear. On the contrary, I am tempted to say, most of us will have ample experience of things going missing with no known trace. The problem of single members of pairs of socks disappearing should be a sufficient example. If my experience is anything to go by, socks show an intrinsic tendency for spontaneous annihilation, and I have ample anecdotal evidence that this is a tendency of socks in general, not only of those previously in my possession – yet for some reason I do not accept this evidence, but think that despite all my fruitless searches, the socks must still be somewhere. We simply do not accept that material objects can disappear, but always presuppose that either they can still be found or else they have somehow been transformed.

But maybe this is just an example of coarse, everyday assumptions to be set aside against the informed and considered judgements of science?

Kant thinks not. In his view the principle of persistence is no less at play in science than it is in "the common understanding". An example is given by Kant himself:

> A philosopher was asked: How much does smoke weigh? He replied: If you take away from the weight of the wood that was burnt the weight of the ashes that are left over, you will have the weight of the smoke. He thus assumed as incontrovertible that even in fire the matter (substance) never disappears but rather only suffers a transformation in its form.*

> * Inserted in Kant's copy of the first edition: "Whence does he know this? Not from experience."[389]

Kant's point here is that the equation "the philosopher" draws upon to devise a method of determining the weight of the smoke (namely, the weight of the wood burnt equals the weight of the ashes plus the weight of the smoke) is not one that could be derived from nor even verified by experience, because *smoke cannot be weighed*. This means that the weight of the smoke has to be *calculated*, and since one cannot check the calculations against any actually measurable weight of the smoke, one has to assume some sort of equivalence or other numerical relationship between those quantities that *are* measurable in the phenomenon in question; and the Principle of Persistence is just such an assumption.

As with any concrete example, many interpretations are possible, and such examples as noted above do by no means constitute conclusive proof that a pure regulative principle of the persistence of substance is operative in experience, but I believe that the examples are sufficiently common and recognisable to at least make it plausible that such a principle *may* be at work. At the very least we have mentioned a puzzling fact about human beliefs, namely that most of us do believe in the face of overwhelming evidence that material objects could not simply disappear. Since the existence of a pure, regulative principle may at least explain the *origin* of this belief, I believe we are fully justified in pursuing Kant's line of thought, and I shall turn now to the issue of *how* precisely, the regulative principle operates.

b) Implementation of the regulative principle

I shall claim that the regulative Principle of Persistence operates at three reasonably clearly distinguishable levels. These three implementations could be termed "The Never-Ending Task", "The Balancing of Books" and "The Conceptual Ascent". The two former ones are quite explicitly indicated by Kant, while the third one seems to be strongly implied.

Let us deal with them in turn.

"The Never-Ending Task" was meant to be exemplified by Jones' refusal to accept the disappearance of the apple and by my conviction that my socks must still be somewhere:

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389 A185/B228

The Principle of Persistence in effect tells us that nothing can come out of nothing, i.e., that everything must come out of *something*; and that nothing can revert into nothing, i.e., that there must always be *something* into which a disappearing thing has turned. Whenever we come into an apparent counter example to the Principle of Persistence, where for instance nothing is found into which the missing article could have turned, we are compelled to conclude only that we have not found the "something" *yet*, we are not entitled to the conclusion that it *could never be found*. Thus the Principle of Persistence tells us to *keep looking*. Finding that which persists through any change, remains as an uncompleted task.

Though Kant is quite brief in explaining the Analogies as regulative principles, he elaborates the notion of a regulative principle considerably in his later treatment of "The Antinomies of Pure Reason". Here, he is considering a regulative principle of pure *reason* rather than one of pure understanding (which latter is what the Analogies are), but the idea that a regulative principle presents us with a *task* – a problem – is illuminating also in the present context:

> The regulative principle of pure reason in regard to the cosmological ideas.
>
> Since through the cosmological principle of totality no maximum in the series of conditions in a world of sense, as a thing in itself, is **given,** but rather this maximum can merely be **given as a problem** in the regress of this series, the principle of pure reason we are thinking of retains its genuine validity only in a corrected significance: not indeed as an **axiom** for thinking the totality in the object as real, but as a **problem** for the understanding, …
>
> Thus the principle of reason is only a **rule,** prescribing a regress in the series of conditions for given appearances…[390]

With the First Analogy, in contrast to the quoted passage, the problem – the task – is not to complete a series of conditions, but to find the persistent in experience. The regulative principles tells us how to perform this task, and faced with apparent counter examples, it instructs us: "Keep looking!"

Now to the second implementation, "The Balancing of Books", which concerns cases where we assign a numerical value to a mass of matter, i.e., when we make use of the scientific notion of *mass.*

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[390] A508–9/B536–7

The quantity of matter – the mass – of a particular object is never directly observable by itself. We have to make some kind of measurement – perform some kind of practical test, e.g. by *weighing* the object in question. This will involve either comparing the object with certain standard objects (as when weighing on a balance) or observing the joint effects of several quantifiable forces (e.g. the force of local gravity and the resistance of a spring as when weighing on a spring scale). In each case there must be more than one quantity involved, and I believe that the relations between the quantities is such that ultimately we may devise a system of measurement only by making constitutive stipulations about at least one quantity. Such stipulations will be necessarily true because they serve as the foundation for obtaining values for the quantities of the system.[391] Now, the Principle of Persistence tells us that what is conceived of as substance must be conceived of as unchanging and unchangeable in experience. Further, insofar as matter is conceived of as substance, and insofar as 'mass' is the concept of the quantity of matter, this implies that we should set up our measurement system by *keeping mass constant* throughout all calculations. We should balance our books so as to satisfy the Principle of Persistence.

The third, and most important implementation is "The Conceptual Ascent", which is largely just implied by Kant.

The explanation of this implementation of the principle relies on the discussion in section 7.5 where we went in search for that which can be thought as subject only never as mere predicate. We started out with noting that in every transformational judgement the subject concept will represent the object of the judgement as *persisting* through an alternation of mutually incompatible determinations. We further saw that the persisting conception – the concept representing that which persists through the transformation – of one judgement could serve as the alternating conception of another; and from this it seems clear that *persistence must be relative to conception.*

This idea will turn out to be important in what follows, so I shall expand on it by way of a few examples. Take a fresh pork chop at your local *delicatessen* – insofar as it is

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391 It is interesting to note that whilst in the Special Theory of Relativity, books are no longer balanced so as to keep the quantity of mass constant (see n. 394), there is still a need for constitutive stipulation. In his exposition of the Special Theory of Relativity, when explaining how an empirical definition of simultaneity must be devised, Einstein notes the need to assume that the speed of light is the same in opposite directions of travel.

> That light requires the same time to traverse the path $A \rightarrow M$ as for the path $B \rightarrow M$ is in reality neither a *supposition nor a hypothesis* about the physical nature of light, but a *stipulation* which I can make of my own freewill in order to arrive at a definition of simultaneity. (Einstein 1920, p. 28)

conceived of – thought of, described – as a *fresh* pork chop it is highly transitory; conceived of as a lump of meat it may be quite persistent; and conceived of just as a mass of matter it is, so it seems, totally persistent.[392] As for that thing "in itself", independent of our conception of it, asking whether *it* is persistent seems to make very little sense.

Now, the First Analogy states the principle that *Substance is persistent throughout experience*. Let us go back to what Kant said about the Analogies in general, which was discussed in section 6.4a). There it was claimed that whereas an analogy in mathematics gives us a way of accurately determining "the fourth member", in philosophy, the analogy gives us only "a rule for seeking it in experience and a mark for discovering it there". But *what* is it that we have a mark for discovering and a rule for seeking?

The subject of the Analogy as it is stated seems to be "Substance", so presumably *this* is what we have a rule for seeking and a mark for discovering. But the Analogy states that Substance is always persistent, yet I just claimed that the notion of persistence is only meaningful relative to some conception. How then can it be claimed that substance is *always* persistent? The resolution of this difficulty lies in recalling that we shouldn't think of the seeking of "Substance" as a quest for a particular kind of entity, but rather as a quest for a particular *concept*,[393] namely a concept such that relative to being thought of by way of that concept, an object is thought of as totally persistent.

To sum up: in virtue of the First Analogy of Experience we have a rule for seeking the substance-concept in experience; namely to look for *the highest concept*, i.e., that concept the extension of which will persist through a maximum number of kinds of possible transformations; and we have a mark for discovering it, namely that if we find a concept such that the arising or perishing of its extension is *inconceivable*, then *that* is the substance-concept in our experience. Now, purely as a *matter of fact* it turns out that *'matter'* plays the role of substance in *our* conceptual scheme, but there is no claim that *this* is necessary, only that *some* concept must play this role.

This leads us to note that there is more to concept acquisition than mere looking around for suitable candidates among a pre-given number of existing concepts. It is an important part of Kant's doctrine that concepts fall within the range of human *spontaneity*. We are to a large extent free to *devise* concepts. We can, within limits, *form* concepts to suit our needs.

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[392] This calls for some clarification. Of course, the particular "lump" of matter currently in the form of a fresh pork chop is not totally persistent and may well be destroyed by fire, decay or digestion – but the matter of which it is composed, considered as a *quantity* rather than as an *entity* is to all practical intents and purposes indestructible. This illustrates how the term 'mass of matter' should be understood.

[393] See p. 196

Thus, if it should turn out that no concept can be found within our current experience which answers to the demands of the First Analogy, then that principle tells us to try to devise such a concept – to try to find *some* conception such that *its* extension persists through all possible transformation.[394]

Now, we can finally begin to see how it could be the case that the Principle of Persistence should be valid for all possible experience: If persistence is relative to conception, and the formation of concepts is within our authority, then we can in a sense *make* the Principle of Persistence come out true, by *devising* a concept such that relative to *it* there is something that always persists in experience. Note how this fits in with Kant's claims about how the Principle of Persistence must be proved:

> In fact the proposition that substance persists is tautological. For only this persistence is the ground for our application of the category of substance to appearance, and *one should have proved that in all appearances there is something that persists*, of which that which changes is nothing but the determination of its existence.[395]

So, this implementation of the principle tells us how to look for a concept of the persistent in experience, and if we find no such concept, it instructs us: "Devise one!"

Yet, there is one lingering doubt: How can we be certain that our attempt at devising such a concept will always be successful? Is it not possible that things may be sufficiently strange that *no substance-concept* could be devised? Surely we have no guarantee that the world will always conform to our desires.

This is the topic of the final section on the regulativity of the Principle of Persistence.

c) The need for the regulative principle

If the arguments of the preceding discussion are granted, we will by now have reason to believe that our empirical investigations of the world are guided by non-empirical, hence pure principles in such a way as to make us attempt to meet the demands of the Principle

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394 I believe an illustration of this can be made in connection with the propagation of Einstein's theory of relativity. According to this theory mass – matter – can in certain cases be translated into *energy* and *vice versa*, and that there is a specific numerical relation between the two. This is the famous formula $E=mc^2$. So it turns out that the mass of matter in the universe can increase or decrease after all – by being transformed into energy. But note that we now think of matter as being *transformed* into energy and *vice versa* and that there is a specific translation formula between the two. This means that we are in a position to form a new highest concept comprising everything which is *either* mass or energy. This new concept, 'matter–energy' now plays the role of substance in the slightly revised conceptual scheme required by the theory of relativity.

395 A184/B227 (italics added)

of Persistence to the best of our abilities. We will attempt to devise concepts and measurement systems such that *something* will be cognised as persisting throughout all possible experience. We will try to fit all alternation of appearances into the schema of a transformation, whereby the alternation is conceived of as a transformation of something which persists. And in *such* apprehensions of alternations of appearances, substance cannot be perceived of as being increased or decreased. But the First Analogy claims more, namely that in *all* alternation of appearances, not merely in those alternations of appearances which are describable as transformations of some persisting thing, substance persists. This seems to imply in a sense that we are always *successful* in meeting the demands of the Principle of Persistence, not merely that we are always compelled to attempt to meet it.

In the First Analogy Kant explicitly claims that in *all* alternations of appearances the substance persists, and that if this were not so, then we would not be able to have the kind of knowledge of temporal relations that we do claim to have. This strong claim is reinforced in the summing-up of the First Analogy which is found in the beginning of the proof of the second:

> That all appearances of the temporal sequence are collectively only **transformations,** i.e., a successive being and not-being of the determinations of the substance that persists there, consequently that the being of the substance itself, which succeeds its not-being, or its not-being which succeeds its being, in other words, that the arising or perishing of the substance does not occur, the previous principle has shown.[396]

Kant's argument for this stronger claim is basically that the Analogies are necessary conditions for experience: *only* by satisfying the demands of the regulative principle can we have (certain kinds of) experience. More precisely it is the knowledge of *time*, of temporal relations, that is said to be dependent on the satisfaction of the Analogies. But let us return briefly to Jones and the Mystery of the Missing Apple. Assume for the sake of argument that a miracle took place and the apple really substantially disappeared from the world. If we take the First Analogy at its word, Jones should not be able to experience this substantial alternation as a temporal sequence. But surely Jones would be able to experience that the apple was there one moment, and the next moment was nowhere to be found; consequently he would surely experience an alternation of appearances, even if he would forever be trying in vain to comprehend it as a transformation of something

[396] B232–3

persistent. Why does Kant think that knowledge of temporal sequences prohibits the apprehension of substantial alternation?

It is in order to solve this final puzzle that I believe we need to bring in the distinction between *occasional* and *typical* time-relations, and what is involved in knowledge of these.

The first point to note is that for knowledge of temporal relations *concepts* are obviously required: Though I believe, and have argued, that concepts are necessarily involved also in intuition, that view may be contested; however when it comes to "thick" experience, and knowledge of temporal relations we need to *combine* intuitions. No single intuition can constitute cognition of time, and the only way we can combine single intuitions is by further subsuming them under concepts in judgements.

This, then, imposes a certain *form* on empirical knowledge, inasmuch as concepts have a certain logical form, namely that of *generality:*

> …the concept is a *general* … or *reflected* representation… Concept is opposed to intuition, for it is a general representation or a representation of what is common to several objects…[397]

This is basically to note that when we pass judgement on objects, we do so by referring to them by some concept, which is to say that we refer to them and describe them as being objects of a certain *kind;* and there is no way we can refer to, pass judgement on or describe objects or events without classifying them as members of a kind.[398] This is the vital key to a proper understanding of the Analogies:

When we cognise objects, we cognise them as being *of a certain kind.* Likewise, when we connect representations of objects in judging time-relations, we connect representations of objects *as being of a certain kind.* What the Analogies are all about is

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397 Log. §1 (Hartmann & Schwarz translates *'Vorstellung'* as 'presentation'. I have here changed it to 'representation' to keep in line with the present terminology.)

398 Waiving, for the time being possible objections about proper names and direct reference. Though Kant's views may seem to be challenged by recent theories in these areas, Kant pre-emptively answers such contentions in his note 2 to §1 of the Logic: "It is mere tautology to speak of general or common concepts, a mistake based on a wrong division of concepts into *general, particular,* and *singular.* Not the concepts themselves, only their *use* can be divided in this way."

Even if the theories of direct reference cannot be reconciled to this, there are rival views available, such as Quine's idea of 'proper verbs' or Searle's 'cluster-descriptional' theory. Besides it seems that genuine single terms are inessential to knowledge in a way that general terms are not, in the sense that we could get along without proper names, using only general terms and demonstratives. We would of course then need to give an account of the use of demonstratives, which for Kant would be incorporated in his doctrine of intuition.

explaining principles for connecting representations according to kind – i.e. *typical* connections of objects of experience. This is a simplified statement of Kant's explication of "the general principle of all three analogies": "the law that all empirical time-determinations must stand under rules of general time-determinations"[399]

In order to have cognitions of objects we must subsume them under concepts in simple observations, and in order to cognise temporal relations we must further subsume them under more complex event-concepts. This is in essence just what we do when we make transformational judgements. When we judge that the apple ripened, we judge that the alternating non-ripeness and ripeness of the apple are respectively the initial and final state of the *event* of the apple ripening. The apple is the object *undergoing* the event of ripening. Now, the first Analogy specifies *the form of our event-concepts.* To fit apparent alternations into transformational schemata is to subsume them under event-concepts. And, as we have seen, if nothing can be found to persist throughout the apparent alternation, then that alternation cannot be subsumed under an event-concept of the requisite form. This, I think, provides us with an illuminating gloss on Kant's concluding remark on the First Analogy:

> Persistence is accordingly a necessary condition under which alone appearances, as things or objects, are [temporally] determinable [as partaking in events] in a possible experience.[400]

Still we are left with that persistent (!) question: Why must we subsume occasional successions of appearances under just *these* kinds of typical time-relations – why must our event-concepts have just *this* form?

But to fully answer that question we, just like Kant, need to bring in considerations connected to the following two Analogies:

> As to the empirical criterion of this necessary persistence and with it of the substantiality of appearances, however, what follows will give us the opportunity to note what is necessary.[401]

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399 A177/B220, cf. p. 211

400 A189/B232

However, in order not to be kept unendurably in suspense, we may note that the requirements of the regulative principles of the Analogies are necessary conditions for our idea of nature as a law-governed whole. But more of this in due course.

401 Ibid.

Chapter 8 – The 2nd Analogy – Succession and Causation

In the Second Analogy of Experience, Kant seeks to justify the principle of causality – that every event has a cause. The principle of causality thus takes the form of a universal claim concerning events. Since Kant equates necessity with strict universality, this will for Kant amount to a refutation of Hume's claims that we can have no knowledge of necessity in causal connections. (Whether Hume would accept the equation between necessity and strict universality and thus concede a refutation even if Kant's arguments go through, is of course an open question.)

8.1 Hypothetical Judgements

The starting-point of the second Analogy is the practice of making *hypothetical* judgements, such as

(21) If it starts raining, then the streets get wet

Note that this judgement *relates* two individual judgements, namely

(21)a It starts raining

and

(21)b The streets get wet

hence Kant's classification of the hypothetical judgement as a *relational* judgement.

We shall see that the observable fact that we do make such judgements provides reason to believe that a pure concept of *cause–effect* and a metaphysical principle of causality are applied in our empirical investigations.

Note that (at least a large sub-set of) hypothetical judgements are inferentially related to *causal* judgements. Suppose that the truth of (21) is known – it really is the case that if it starts raining, then the streets get wet. Suppose further that I know that it is starting to rain. This will warrant me in drawing the conclusion that the streets will get wet, and I can truthfully express this by stating:

(21)' The streets will get wet *because* it is starting to rain.

or, in retrospect

(21)" The streets got wet *because* it started to rain.

This exemplifies the close relation between a hypothetical judgement and the notion of a cause.

Clearly, in these cases we are asserting something more than the mere fact that it started raining, *and* the streets got wet. Hume famously analysed the causal claim as involving spatio-temporal contact, constant conjunction and necessity,[402] and then dismissed the claim of necessity as being unfounded and empty.

We are clearly able to distinguish between the mere *contingency* of my going outside and it starting to rain, and the *necessity* of the streets getting wet when it started to rain. Yet in both cases, when regarding only our particular experience of them, all we have is a succession of experiences of events. Whence the *necessity* in the latter case?

Our task is to see whether a justification to the element of necessity in a causal claim might not be validated in similar fashion to the justification of other pure concepts.

8.2 The Causal Principle

The second Analogy itself is Kant's reformulation and justification of the traditional philosophical doctrine of the principle of sufficient reason, but reinterpreted as being a principle pertaining to knowable nature. Kant states the Analogy thus in the 2nd edition:

> **Second Analogy.**
>
> **Principle of temporal sequence according to the law of causality.**
>
> Everything that happens (begins to be) presupposes something which it follows in accordance with a rule.[403]

And, in the 1st edition:

> All transformations occur in accordance with the law of the connection of cause and effect.[404]

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402 See p. 67

403 B232

Note that the 1st edition formulation makes it explicit that the Analogy pertains to *transformations*, hence as I read it, to *events*. The "principle" does not concern the temporal order *in* an event though, which was treated in the first Analogy, but rather the temporal order *of* events in a causal connection, i.e. the "connection of cause and effect". In essence this states the principle that every event has a cause, which I shall refer to as the Causal Principle.

Now, in making a completely universal claim about all events; past, present or future; experienced by me or anyone else or not; the Causal Principle clearly goes beyond experience, even beyond the collective experience of all of mankind. Since the Principle is not analytic – there is no contradiction involved in the idea of an uncaused event – the principle must, if true, be *synthetic*, and in being universal, it must be *a priori;* which is to say that the Causal Principle, if true, is paradigmatically metaphysical.

We need, however, to distinguish the Causal Principle from knowledge of any particular causal law, such as

(22) If a moving billiard ball hits a stationary one, the latter is thereby brought into motion

Note that Kant does not claim that our knowledge of particular causal laws is *a priori* (if *that* was true, we should hardly need experiments in physics). Knowledge of particular causal laws can only come from experience, and indeed experimentation, but the *form* that a causal law must have, or more precisely: the *form* a judgement must have for it to qualify as a possible judgement of a causal law, is not derivable solely from experience and must therefore have its origin *a priori.* Kant makes this point towards the end of his treatment of the second Analogy:

> [H]ow in general anything can be transformed, how it is possible that upon a state in one point of time an opposite one could follow in the next – of these we have *a priori* not the least concept. For this acquaintance with actual forces is required, which can only be given empirically, e.g., acquaintance with moving forces, or, what comes to the same thing, with certain successive appearances (as motions) which indicate such forces.[405]

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[404] A189

[405] A207/B252

8.3 Causal Laws

We shall look a little closer at the distinction between the two different experiences of successions of events briefly alluded to in the previous sections. We imagine that one day, I go outside, and then it starts raining, and shortly thereafter the streets get wet.

This gives us two successions of events: First my going out is followed by the rain starting; second the rain starting is followed by the streets getting wet.

Now, my beliefs concerning these two successions of events are clearly markedly different. In the first case, I do not believe there to be any causal connection between my going out and it starting to rain, while in the second case I believe that the streets got wet *because* of the rain starting. In other words: It is possible that I go out, and it doesn't start to rain, but *ceteris paribus* it is not possible that it starts to rain and the streets do not get wet; which is just to say that there is a necessary relation between it raining and the streets getting wet, but merely a contingent one between my getting out and it starting to rain. But whence my knowledge of this necessity – whence my ability to distinguish between causation and mere succession?

As with the distinction between experiences of objects and of events, we might by now expect that the knowledge of necessity is connected with *regularity* – conforming to rules, and this is exactly what Kant claims:

> Thus if I perceive that something happens, then the first thing contained in this representation is that something precedes, for it is just in relation to this that the appearance acquires its temporal relation, that, namely, of existing after a preceding time in which it did not. But it can only acquire its determinate temporal position in this relation through something being presupposed in the preceding state on which it always follows, i.e., follows in accordance with a rule […][406]
>
> This rule for determining something with respect to its temporal sequence, however, is that in what precedes, the condition is to be encountered under which the occurrence always (i.e., necessarily) follows.[407]

As we have seen, rule-governedness – regularity – implies repeatability, so causal laws must involve event-*types* rather than just particular events. When judging that a particular event *caused* another event, I am asserting that they instantiate a relation holding between the event-*types* of which the two events are *tokens,* and the relation in question is this:

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406 A198/B243 (my underscoring)

407 A200/B246

That when an event of the former type occurs, then an event of the latter type *always* occur. There is thus a *universal temporal relation* between the two event-types, namely: An event of the former type is always followed by an event of the latter type.[408] This then is the general form of the rule to which two events must conform, if they be correctly judged to stand in a causal relation: that an event of the former kind is *always* followed by an event of the latter kind. In Kant's words "in what precedes, the condition is to be encountered under which the occurrence always, (i.e., necessarily) follows."

So far, the discussion of the Causal Principle has been *analytic*. What Kant has tried to establish is what is in fact *implied* in our causal judgements – what is "contained in" the concept of causation. In this, his analysis differs little from Hume's.

Kant's next step is to enquire into how we are able to make these judgements, with their implied claims to necessity. How can we judge beyond experience?

> Experience teaches us, to be sure, that something is constituted thus and so, but not that it could not be otherwise.[409]

It is all well and good to know that two events are causally related *if* they belong to kinds of events that are related in such a way as to conform to the specification of the Causal Principle, namely such that the one kind is *always* succeeded by the other kind, but how are we to determine whether they are in fact related in this way?

> Experience never gives its judgments true or strict but only assumed and comparative **universality** (through induction), so properly it must be said: as far as we have yet perceived, there is no exception to this rule.[410]

Since we must derive our acquaintance with instances of particular causal laws from experience, and thus clearly know them *a posteriori*, not *a priori*, how can we validly claim any necessity of them?

But here we must recall that it is not the individual causal laws that are claimed to be knowable *a priori*, but rather the Causal Principle. Of any particular causal law, we can indeed only say that "so far as we have yet perceived, there is no exception to this rule", and they will in principle always only have a kind of "candidate status" as expressions of true causal laws. Yet, their hitherto conforming to the Causal Principle is what bestows

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408 See section 6.1e) p.160

409 B3

410 *Ibid.*

on them their very candidate status, and it is *this* – the Causal Principle itself – which is claimed to be knowable *a priori*, universally true, and a necessary condition for the experience of certain temporal relations.

This then leaves us with three unresolved questions:

– How do we determine whether an experienced phenomenon conforms to a rule whose claims go beyond experience?
– How do we justify the *universal* validity of the Causal Principle?
– Why is the truth of the Causal Principle a necessary condition for experience of (some) temporal relations?

We shall see that the answer to all these questions turn on considerations of our capacity for *spontaneity*, as opposed to the essentially *passive* faculty of sensibility.

8.4 The test for Causality

Having observed the succession of two events, say the rain starting and the streets getting wet last Thursday, I have grounds for determining the *occasional* time-order of these two events. Furthermore, I may have occasion to enquire into whether this occasional time-order corresponds to a *typical* time-order between events of these kinds, which then amounts to an enquiry into whether there is a causal connection between the rain starting and the streets getting wet.

The first step is clearly to collate this experience with the rest of my experience, and find out whether the time-order of events instantiated in my Thursday experience is invariably instantiated, i.e. to try to establish whether I have ever experienced it starting to rain, without the streets getting wet *(ceteris paribus)*, and this comparison with *my* previous experience could of course easily be extended to the experience of others, by verbal communication. If the occasional time-order of the events is thus found to correspond to a strict, typical time-order, I am justified in judging that a *necessary* time-order indeed obtains, and the relation between rain starting and the streets getting wet is elevated to candidate causal law status. If there is an objective causal relation between the rain starting and the streets getting wet, then these events must be universally related in experience, hence I take the fact that they have so far always been correlated as an *empirical criterion* for subsuming them under the concept of an objective causal relation.

So, as was the case with the validation of the notion of the object of experience, considerations of generality – of universality – are brought in to justify judgements of objectivity.

However, all we have so far is a candidate for a causal law. This first test does not distinguish events related as of cause and effect from events related as joint, but temporally successive effects of a common cause or events which reciprocally cause one another, nor does it give any means for deciding whether a lack of counter examples which would disprove the universality of the time-order is due simply to a scarcity of experienced cases or to a true objective universality of the relation.

The key instrument for deciding these kinds of cases turn on our capacity for *practical activity*, and as it happens, we have in favourable cases ways of distinguishing cause-and-effect-relationships from joint-effects-of-a-common-cause and reciprocal-causation relationships, but though we can progressively strengthen the candidature of any putative causal law, we have no means of conclusively elevating it from the status of candidate to proven causal law.

a) The Practice of Experimentation

An essential aspect of our practice of causal enquiry is the performing of *experiments.* The underlying idea is that *we can make things happen*, and by utilising this ability, we can test the relationships between kinds of events. Say I have repeatedly observed the melting of an ice-cube after it has been removed from the ice-box. Suppose I have led such a sheltered existence that I have very little experience of the causal properties of ice-cubes save for their tendency to be included in the drinks so diligently brought to me by my butler,[411] and as mentioned their intriguing metamorphosis in the silver ice-bucket. Overcome by an uncharacteristic naturalist urge I resolve to determine the true causal facts obtaining to this "melting" as I have heard it termed.

Initially I have two hypotheses concerning the melting of the ice-cubes:

i) it is caused by the increase in surrounding air temperature, or
ii) it is caused by increased altitude (I gather that the ice-box is situated somewhere in the cellars).

First I resolve to decide between the two hypotheses by closely watching the activities of my butler as he procures the requisite specimens. However, I quickly realise that this will

[411] Well, even a philosopher can dream, can't he?

be of no avail, as of course in each and every case both of the candidate causes of the melting of the ice are present, and indeed on each occasion the ice-cubes obligingly melt. This gives me no grounds for deciding between the hypotheses, so I am no further in my investigations.

Then, illuminated by a sudden insight, I make the crucial intellectual leap and resolve to take practical action. Though unfamiliar at first, this soon facilitates considerable progress: I realise that by manipulating the practical situations, I can actually *test* the two hypotheses. I decide to test the latter hypothesis first. Now, in order to provide a test situation between the two, I need to bring it about that only one of the putative cause event-types occur, and then observe whether the effect event-type occurs. This, I realise, can easily be achieved if the ice-box be brought upstairs to my study, so I have my butler carry it into the study and then I eagerly await the result, peering only occasionally into the ice-box, so as not to make the temperature increase inside and invalidate the experiment. Finding that no melting takes place as a result of the increased altitude, I continue to my second experiment, which involves heating the ice-cubes at their original place in the cellars. To cut a long story a short, I eventually conclude that it is the increase in surrounding temperature that cause the ice-cube to melt and not the increase in altitude.

The point of the story is to illustrate that by using our ability to *interact* with the world, we can actually *test* causal hypotheses, and though over-simplified, the story illustrates the basic features of *experiment*. In investigating nature – investigating causal laws – we need not and do not rely solely on our *passive* faculties of receptivity. We do not merely wait around for perceptions to occur, and then inwardly sift and sort them looking for correlations. We can actually *make things happen,* bring it about that certain states of affairs obtain, certain events occur, and this *active* ability makes it possible in many cases to test causal hypotheses, and thus to adjudicate between rival candidate causal laws.[412]

The emphasis on concrete experiments is brought out explicitly in Kant's account of how we determine the causal order of concurrent processes. Kant's examples are a stove causing a room to heat, a leaden ball causing a dent on the surface of a cushion and a narrow glass causing a concave surface on the water contained in it. Especially his

[412] I am indebted to Dr. Jens Saugstad of the University of Oslo for pointing out the importance of concrete, physical actions in Kant's theory of knowledge. He defends an "externalistic" interpretation of Kant, where "acts of reason" *(Verstandeshandlungen)* are seen as overt bodily actions. See Saugstad 1992 and Saugstad 1993, esp. ch. 6–7.

explication of the latter two cases seem to me to refer explicitly to concrete, practical experiment.

> [I]f I lay the ball on the pillow the dent follows its previously smooth shape; but if (for whatever reason) the pillow has a dent, a leaden ball does not follow it…
> [A]s soon as I draw the water into the glass from a larger vessel, something follows, namely the transformation of the horizontal state which the water had there into a concave state that it assumes in the glass.[413]

By virtue of our active ability to cause events to occur in the world we are able to distinguish cases of true causation from cases of joint-effects-of-a-common-cause. Say that we want to find out whether an event of type A truly are caused by an event of type B or whether they are both caused by an event of type C. If we are able to bring about the occurrence an event of type B, without an event of type C occurring, we can conclude that *our actions* caused event B and therefore, event C did not. If, further, every time and in every way we do this – bring about the occurrence of event B, event A always occur, then we are justified in holding that events of type B cause events of type A, thus we are justified in making the judgement

If B, then A

In this way, we are able to put our candidate causal laws to the test of purposely planned interventionist experience in the form of experiments, breaking into the causal chains of the phenomena under investigation; and the more tests a candidate causal law passes, the stronger its candidature.[414]

A passage from the introduction to the 2nd edition of the *Critique* is highly illuminating of Kant's emphasis on active experimentation, and also illustrates his interest in investigating the foundations not only of any experience in general, but also of

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413 A203–4

414 This might raise the worry that maybe we are never able to break into the causal chains of nature. If we ourselves are natural creatures, then it might seem that one must assume that all our practical actions are *part of* the very causal chains I claim we are able to break into. Whether and to what extent our actions in fact *are* part of the causal chains of nature is a deeply interesting topic in its own right, with ramifications for questions of free will and morality, but not one which needs concern us here. It is enough that our intervention into the causal chain of the phenomena under investigation is not caused by events *belonging to those phenomena.* When we perform experiments we must assume that the range of phenomena investigated is resasonably distinct, and it is enough that the effects of our actions not be caused by events ranging within the field of phenomena being studied. Whether willed, intentional actions, are themselves caused in their turn is of no consequence to the experiment, so long as they are not caused by any of the events being studied.

scientific, law-like knowledge in particular, as instantiated paradigmatically by Newtonian physics (though that work is not mentioned explicitly here):

> When Galileo rolled balls of a weight chosen by himself down an inclined plane, or when Torricelli made the air bear a weight that he had previously thought to be equal to that of a known column of water, or when in a later time Stahl changed metals into calx and then changed the latter back into metal by first removing something and then putting it back again, a light dawned on all those who study nature. They comprehended that reason has insight only into what it itself produces according to its own design; that it must take the lead with principles for its judgments according to constant laws and compel nature to answer its questions, rather than letting nature guide its movements by keeping reason, as it were, in leading-strings; for otherwise accidental observations, made according to no previously designed plan, can never connect up into a necessary law, which is yet what reason seeks and requires. Reason, in order to be taught by nature, must approach nature with its principles in one hand, according to which alone the agreement among appearances can count as laws, and, in the other hand, the experiments thought out in accordance with these principles – yet in order to be instructed by nature not like a pupil, who has recited to him whatever the teacher wants to say, but like an appointed judge who compels witnesses to answer the questions he puts to them.[415]

This active intervention in the natural order now gives us an explanation of how we go from a passive observation of generalities towards a judgement of universal laws, though our putative statement of laws will never attain full certainty, but only a comparatively strengthened candidature.

So, we have answered the first question on p. 229, how we judge that an experienced phenomenon conforms to a rule that goes beyond experience, namely by utilising our active ability to intervene in nature. Still, even if we have a means of determining whether a certain correlation of event-types has a stronger candidature for causal law-status, thus a way of approaching a comprehensive set of causal laws, we seem to have no guarantee that our experiments will always uncover true causal laws. We may know how to look, but that does not guarantee that we shall always find. In other words, we have as yet no justification for the *universality* of the Causal Principle, only a justification for the instances of it that we do claim to know. Which consideration brings us to the next question, concerning what justification we have for holding the universal applicability of the Causal Principle.

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8.5 The Universality of the Causal Principle

So far, we have investigated how candidate causal laws have their candidature strengthened as we gain progressively stronger grounds for asserting their conformance to the *form* of causal laws as specified in the Causal Principle. This gives us reasons to believe that strong candidate causal laws hold universally of the event-types specified in the individual law-statements. If the causal judgement "If A then B" is true, then that judgement holds universally of all events of type A. So we have a justification for the universality of all particular causal laws insofar as they are known, but this falls short of a justification of the universality of the Causal Principle itself, which principle states that *every* event occurs in accordance with *some* causal law. Since all causal laws fall under the Causal Principle, all events that fall under a causal law *ipso facto* falls under the Principle. But then the question is: do all events fall under a causal law? If the Causal Principle is to be universally valid, it seems that they must, but what justification could we have for believing that all events – past, present or future – fall under some causal law?

The key to answering this question is to remember that the Causal Principle is supposed to be a *regulative* principle (see p. 211). A characteristic of regulative principles is that we are *required* to make them come out true in cases where the empirical evidence leaves it undetermined how to conceive of, how to describe, a state of affairs. But this needs some elaboration:

a) The generality of events

When we investigate the truth of a candidate causal law, say "If A then B", we want to determine whether *whenever* an event of type A occurs it is followed by an event of type B. Clearly, then, it is relevant to enquire how we determine the type of an event in the first place. Roughly a causal law says that whenever you have the same kind of event as *this*, then the same kind of event as *that* follows. What then is to count as *the same kind of event?*

Let us go back to our example of a particular causal law:

(22) If a moving billiard ball hits a stationary one, the latter is thereby brought into motion

We want to know whether whenever an event of the kind here described as a moving billiard ball hitting a stationary one occurs, the event described as the latter billiard ball

being brought into motion also occurs. But what is to count as an event of the same kind as the former one? How alike must two events be to count as being *of the same kind*?

Clearly it is absurd to demand that the events be alike in every detail – a moving billiard ball may hit a stationary one in any manner of different ways, from different angles and with different speeds; and it would still be a true case of a moving billiard ball hitting a stationary one. In other words, it would be an instance of *this* general kind of event; though if we were to give a more specific description of the events – say of a moving billiard ball hitting a stationary one of equal mass with a specific force F – then we might have to hold the events to be of different kinds. Indeed, the question of sameness of kind of events seems quite meaningless without specifying what kind is in question. Given the question "Is this the same as that?" with no further specification given verbally or by context, the only appropriate response seems to be "The same *what?*"**.**

It seems that only relative to a description, relative to conception, can sameness of kind, or *typical* identity be evaluated. Being of the same kind is equivalent to being correctly subsumed under the same concept, so clearly the notion becomes meaningless when no concept is specified.[416]

Now, we can note an interesting parallel: Just as the sameness in kind of events is relative to description, so is the generality of a correlation of events. Take (22) again. As described, that judgement has a quite high general validity, it really is the case most of the time that when a moving billiard ball hits a stationary one, the latter is brought into motion; but there are exceptions: The stationary ball might be glued to the table, it might be brittle and shatter on impact and so on and so forth. So to arrive at a formulation with a stronger candidature as a causal law, we should sharpen the formulation of (22) to something like

(22)'If a moving, non-brittle billiard ball hits a stationary unimpeded non-brittle one…

[416] It is an interesting question whether individual identity is also relative to conception. This is a more thorny issue, but not of consequence in this context. Here, we are concerned with sameness of *kind* – typical identity, or what one could term *qualitative,* as opposed to *numerical* identity.

which formulation has considerably higher general validity than the original one. Similarly, we can imagine true descriptions of the two initial events, the general correlation of which is very low, such as:

(22)" If a moving red object hits a stationary white object …

A description using these event-concepts would still amount to a true description of the initially observed state of affairs ("a moving red object hit a stationary white object and the latter started moving"), but it would cite no *general*, much less a *universal* correlation of the event-types in question, and could not be transformed into a true causal judgement. We could plausibly utter truly: "The white object started moving *because* it was hit by the red object", but only on the implicit understanding that we could cite some correlation other than between the events as described here – it is plainly false that every time a red object hits a white one, the white one starts moving. (Think of a ripe strawberry hitting a fridge.)

It seems then that the possible extent of our success in fitting our knowledge of the world into causal judgements, our success in subsuming events under the Causal Principle, is relative to our concepts – our system of classification. This echoes precisely the considerations noted in the discussion of the 1st Analogy, concerning the concept of substance (see p. 218).

Since the choice of concepts often does not influence the possibility of a correct description of particular events – thus of straightforward empirical truth – the choice of concepts is not directly determined by, cannot be read off of, experience alone. Only by reference to the possibility of subsumption under an all-pervasive system of causal laws is the choice of concepts further restricted by the Causal Principle. As was the case with the 1st Analogy, we should note that we have a certain faculty of *spontaneity* and *creativity* of concepts. The regulative Causal Principle tells us to choose and, if necessary, develop concepts that make possible an all-pervasive true system of causal judgements.

Given a finite set of event-concepts, we could in principle test every possible combination of them and thus discover the complete set of causal laws. But it is quite clear that a crucial part of scientific enquiry consists of devising *new* concepts – new ways of describing the world and the objects and events in it. So long as there is no reason to believe that the number of possible concepts is anything but indefinite, there is no way to refute the Causal Principle – no way to prove that there is *no* set of concepts

relative to which any given phenomenon is subsumable under concepts that enter into true causal law statements.

Add to the irrefutability of the Causal Principle its regulative nature which instructs us to actively favour and develop such concepts as make possible a true causal description of the world, and the possibility (if not perhaps the practical necessity or utility) of ensuring its universal validity is explained.

To paraphrase Kant, the Causal Principle is given as a *task*. It is as it were a dictate of reason, informing and restricting our practice of concept-formation. "Devise concepts such that the Causal Principle comes out true!".

8.6 The Utility of the Causal Principle

The discussion above has provided some arguments for *how* the truth of the Causal Principle could be enforced – how its universality is ensured, but we have not yet explained *why* we employ it. Why favour concepts that enable a causal description of the world when true descriptions need not be causal?[417]

Again, Kant's general explanation is that the regulative principles of the Analogies make possible the knowledge of temporal relations, and in the case of the 2nd Analogy, knowledge of the temporal relation of *succession* is supposed to be made possible by the employment of the Causal Principle.

This claim, however, is not altogether easy to justify as it stands. It would seem that at any point of time in human history, we have acquaintance with and knowledge of a vast range of phenomena whose complete causal relations we do not yet know. For instance, we do not know why a certain caesium atom decays at the particular time that it does. Indeed, modern physics holds that there *is* no particular cause for it decaying at a particular time, merely a certain average probability for any caesium atom to decay sometime during a given period. Nevertheless we seem perfectly able to determine at precisely what time a certain caesium atom *did* decay and whether this event preceded or succeeded other related or unrelated events, which means that we *do* in fact have knowledge of temporal relations that such an event enters into, even if we are presently unable to subsume the event under any true causal law statements, hence unable to subsume it under the Causal Principle.

[417] I take it that the value and utitlity of the truth of our beliefs is uncomplicated: If we want to survive, our beliefs about for instance where to find food had better be largely true.

Why then does Kant think that the employment of the regulative principles of the Analogies are necessary conditions for the knowledge of temporal relations when we manifestly have such knowledge in cases where we do not successfully employ these regulative principles, and why should we believe it?

There is no clear-cut solution to this riddle in Kant's text, but I think the key again lies in recalling the clue noted on p. 161 concerning the distinction between *typical* and *occasional* time-relations. Note that in the case of the decaying caesium atom, we can only have knowledge of the *occasional* time-relations that each particular decay-event enters into, given that according to modern physics there *is* no strict regularity of events with regards to the precise occurrence of the decay – there are no causal laws governing the precise moment a caesium atom decays. To know the causal laws that govern a phenomenon *just is* to know the strict typical temporally successive relations that obtain of the events involved. Since the *a priori* deployment of the Causal Principle is a necessary condition for knowledge of causal laws, it is *ipso facto* also a condition for the knowledge of temporal relations, specifically *typical* temporal relations, which is just what we wanted to determine.

So, applying the Causal Principle is a necessary condition for having knowledge of certain typical time-relations, namely those of succession. Applying the Causal Principle enables us to know what kind of events *typically* succeed one another. The next natural question then is: Why favour this *causal* knowledge?

The virtue of causal knowledge is that it enables us in addition to merely correctly *describing* the world, also to *predict* and in retrospect to *explain* the events of the world. If I truly know that the rain causes the streets to get wet and I observe that it is starting to rain, I can confidently *predict* that the streets will get wet; which prediction could turn out to be highly useful, for instance occasioning me to change into more appropriate footwear. Similarly I would be able *post facto* to *explain* why the streets got wet, namely because it started to rain.

Finally now, we can answer the persisting question from the treatment of the 1st Analogy: Why must we subsume experiences under event-concepts of the form that we actually do? – which by implication is to ask why we cannot allow of substantial creation or annihilation. The answer is that doing so would make impossible further subsumption under causal laws, and hence would make impossible predicting or explaining such occurrences. Suppose we want to know of any given experienced event what kind of event always succeeds it, which is another way of saying that we want to know which

typical temporary successive relation that particular event enters into, which is to say that we want to know which causal laws it is subject to, which again is to say that we want to know what caused it and what its effects are. This, we have seen, is only possible by implementing the regulative Principle of Causality; but the Principle of Causality in turn, can only be applied and implemented if the observed phenomenon is subsumable under an event-concept in the first place. Since the Causal Principle tells us how to organise cognised events under causal law judgements, the subsumption of observed phenomena under event-concepts is a necessary condition for the subsequent subsumption under causal law statements.

Let us assume a kind of happening such that it would have to be regarded as creation *ab annihilo*. The only way it could be in principle impossible to subsume this happening under an event-concept amenable to the principle of persistence is if there were *no* correlation between this miraculous happening and prior events, which is to say that this happening would not enter into any typical relations of succession, which again is to say that it could not be causally explained nor predicted.

So, to conclude: both the Principle of Persistence and the Causal Principle are necessary for any possibly true conception of the world as a predictable, law-governed whole, and the realisation of this description is the goal of natural science. It is the prospect of the completeness of physics – the total theory.

Given this reading of the Analogies, the conclusion to the discussion so far, would be that any kind of mathematically expressed science of nature – any physics – which aspires to completeness must have some kind of conservation law as a fundamental, constitutive principle.

A final word about this aspiration to completeness: We might grant that as a matter of fact physics has completeness as its ideal, and that any scientific inquiry is directed towards this goal, but surely that is no guarantee that we will even get close to achieving it? Could we not simply find that at the end of the day we must simply conclude that at some fundamental level, the world really is capricious – that there are no laws?

The deep, Kantian point is that we cannot in principle distinguish between not having a complete causal description of the world because no comprehensive causal description *could* be found, or because we simply haven't found it *yet*, and the presumption that we can ever approach more closely such a comprehensive causal description remains a necessary presupposition of certain aspects of natural science. Thus, the Causal Principle is in a very precise sense an *ideal* of natural science.

I have found it necessary to include these observations concerning the Analogies in general before proceeding to the 3rd Analogy, as the interpretation of and justification for the 2nd Analogy essentially feeds into the understanding of the 1st. However, now that the first two Analogies are treated, making sense of the 3rd Analogy is comparatively simpler.

Chapter 9 – The 3rd Analogy – Simultaneity

Like the first two, the third Analogy proper takes the form of a regulative principle. It is stated thus in the second edition:

> **Third Analogy.**
>
> **Principle of simultaneity,**
>
> **according to the law of interaction, or community**
>
> All substances, insofar as they can be perceived in space as simultaneous, are in thoroughgoing interaction.[418]

And in the first:

> **Principle of community**
>
> All substances, insofar as they are **simultaneous,** stand in thoroughgoing community (i.e., interaction with one another).[419]

When it comes to the details of the third Analogy, I find that I have to part company with Kant. Kant presents the third Analogy as an epistemic principle, specifying the basis on which we make judgments of occasional simultaneity. This principle, I shall claim, can only be regarded as untenable. Further, it seems impossible to relate the third Analogy to the corresponding "disjunctive" form of judgement from the table of judgements. However, it is possible to construct an argument concerning judgements of *typical* simultaneity that fits into the Kantian scheme, and also to relate this to a form of judgements that is missing from Kant's original table.

9.1 The Principle of Simultaneity

According to Kant, the Principle of Simultaneity seems to state that there are causal connections between all perceptible objects in the knowable universe. ("All substances, insofar as they are **simultaneous,** stand in thoroughgoing … interaction with one another").

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418 B256

419 A 211

This is, so to speak, fine as far as it goes. Given that perception takes place via causal influence of the objects of perception upon our sense organs, any object which I can perceive is indeed directly causally connected to me. Now, I can only know objects either directly by perception, or indirectly through their causal influence on other perceived objects. Hence every object which I can know, is causally connected to me; therefore all knowable objects are causally connected through the knowing subject. Let us call this the thesis of Universal Causal Connection. This thesis is true enough, but it is trivial – it has no rich consequences. Further, it is *analytic* in being directly derivable from our concepts of perception and knowledge, and it has very little to do with simultaneity. Instead a principle of simultaneity, which we can call the Principle of Arbitrary Perception, seems to appear in the Proof:

> Things are simultaneous insofar as they exist at one and the same time. But how does one cognize that they exist at one and the same time? If the order in the synthesis of the apprehension of this manifold is indifferent, i.e., if it can proceed from *A* through *B, C,* and *D* to *E,* but also conversely from *E* to *A*.[420]

So, here we seem to have a real principle of simultaneity, read as an epistemological principle telling us what criteria we have for judging simultaneity: We judge things to exist simultaneously if we can perceive them in arbitrary order. Presumably we test for simultaneity by shifting our perception at will from one to the other and back again, and if none of the things in question disappear in the process, we deem them to exist simultaneously. This then is a principle to determine whether any set of objects are occasionally simultaneous. This reading seems also to be supported by Kant's example in the first paragraph which is added to the Proof in the 2nd edition:

> …I can direct my perception first to the moon and subsequently to the earth, or conversely, first to the earth and then subsequently to the moon, and on this account, since the perceptions of these objects can follow each other reciprocally, I say that they exist simultaneously.[421]

Strawson certainly reads the 3rd Analogy as claiming such an epistemological principle, which he thinks that "suitably and reasonably interpreted and qualified" does seem to hold :

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420 A211/B258

421 B257

> Lack or possession of order-indifference on the part of our perception is, [Kant] seems to say, our criterion – whether we reflectively realize the fact or not – of objective succession or co-existence.[422]

The first problem with this reading is that the principle is simply false. Imagine a wall with two parallel mirrors, set two meters apart. Now, I can perceive my mirror image in mirror A, then move to mirror B and perceive my mirror image there too. Whether I proceed from mirror A to mirror B or vice versa, makes no difference, so we should conclude according to the principle of simultaneity that the two mirror images exist simultaneously. Yet, even if I am not in a position to perceive it, my mirror image really disappears when I leave the mirror (or so I'm told anyway).

Worse still is the problem that Kant's further explication of this principle is incompatible with Arbitrary Perception and goes significantly beyond Universal Causal Connection. Immediately after stating the principle of Arbitrary Perception, he claims that this can only be known of, i.e. can only be applied to, objects which act on each other and "receive a reciprocal influence"[423] from each other, which is to say that they stand in a "dynamical community of interaction". He seems to be saying that for two objects to be validly judged as simultaneous, they must mutually cause each other, or at least causally influence each other:

> [E]ach … substance must simultaneously contain the causality of certain determinations in the other and the effects of the causality of the other, i.e., they must stand in dynamical community (immediately or mediately) if their simultaneity is to be cognized in an possible experience.[424]

This is claiming considerably more than what was read into the thesis of Universal Causal Connection. Let us use the example of the moon and the earth: Even if they stand in causal connection mediately by both influencing my sense organs, that does not entail that they influence each other. The problem is that the "causal influx" of perception is essentially one-way. We are influenced by, but do not in turn significantly influence the perceived objects. (Considerations of the Heisenberg uncertainty principle are quite irrelevant on this scale.) Maybe then, the relevant point is that the earth and the moon stand in *immediate* causal connection, which they clearly do: they are causally influenced

422 Strawson 1966 p.134

423 A212/B258

424 A212–3/B259

by mutual gravitation. And yet this mutual gravitational influence seems to be largely irrelevant to their simultaneous existence. Indeed one of the theories of the formation of the moon is that it was once moving independently of the earth and then at some stage got caught in the earth's gravitational field and locked into orbit around it. So it is clearly possible that the moon and the earth be causally independent of each other and yet exist simultaneously. Nor does the mutual gravitation seem to be essential for two objects' being *perceived* as simultaneous. Imagine being aboard the *Mir* space station, looking at two free-floating foam rubber balls. In such a situation there would certainly not be any *perceivable* gravitational pull between the balls (and probably not even a measurable one), yet surely one would have little problem in judging that the balls are both simultaneously there. For judgements of occasional simultaneity, it seems that considerations of mutual interaction is quite irrelevant.

So, to sum up where Kant's statement of the third Analogy leaves us: The thesis of Universal Causal Connection proves too little, the principle of Arbitrary Perception claims too much, the proof does not prove the principle and the examples do not exemplify the claims.

Now, this may be a somewhat unfair dismissal of Kant's arguments, and perhaps more sense could be made of his claims on a more sympathetic reading. I shall have to forego that task here, however, and focus instead on showing how we can make sense of a principle of simultaneity as a third analogy of experience once we take into account the distinction between occasional and typical simultaneity.

To do this, we must again hark back to Kant's conception of knowledge. As mentioned on p. 221 we can only cognise objects by way of concepts, and hence we can only know objects as being *of a certain kind.* As was the case with the first two Analogies, the third should concern relations of *kinds* of objects – *typical* relations. What we are after is a principle for determining which kinds of phenomena are *typically* simultaneous – always occur together; not some principle for judging what things are occasionally simultaneous – just happen to occur at the same time for once. The third analogy should thus concern a much narrower class of phenomena than what Kant implies.

9.2 Typical Simultaneity

The principle of simultaneity then, should read:

All substances, in so far as they can be perceived as typically simultaneous, stand in thoroughgoing mutual interaction.

Now, being *typically* simultaneous, or simultaneous as to kind, entails universality or necessity in that *every* set of objects of the relevant kinds is temporally co-located. Like causal connection entails a universal and hence necessary one-way connection, simultaneity and interaction entails a necessary two-way or reciprocal connection. Recall that the way we establish the existence of causal connections expressed in causal laws is by *experimentation.* If we bring about an event of type A, and an event of type B always and immediately follows, then A typically causes B. Now, if this dependence works both ways so that the deliberate positing of event A always and immediately is followed by event B, *and* the positing of event B likewise is followed by event A, then the two events are typically simultaneous. A good example would be the existence of a magnetic field round a live electrical conductor and the electrical current in the conductor itself. If we bring about the current, then the field always and immediately appears, and if we induce the magnetic field, then a current always and immediately appears. Another way of explaining this is that they really are just two aspects of one and the same phenomenon. Even if we may recognise the current and the field by different methods, they are just two characteristics of one and the same kind of event. But this is exactly what Kant says:

> …this is a reciprocal influence, i.e., a real community *(commercium)* of substances; without which the empirical relation of [typical] simultaneity could not obtain in experience. Through this commerce the appearances, insofar as they stand outside one another and yet in connection, constitute a composite *(compositum reale).*[425]

The two kinds of phenomena are conceptually external to each other, that is to say that we cognise or recognise them by different characteristics – subsume them under non-cointensional concepts, yet they are *really* connected, that is connected in reality.

We clearly distinguish between cases of typical simultaneity, such as the example of the magnetic field and the live conductor, which *always* occur together; and cases of occasional simultaneity, such as a cat and a dog running simultaneously past my window. In the former case we take it that the simultaneity is necessary – these two phenomena *must* occur together, while in the latter the simultaneity is purely contingent. The transcendental question is on what basis we make this distinctions. How can we judge that the magnetic field and the live conductor form a *compositum reale?*

[425] A214-5/B261-2

9.3 The third Relational Judgement

To complete the reconstruction of the third Analogy, we need to make the connection to a form of judgement. There are three kinds of typical time-relations, and our knowledge of instances of each of them is facilitated by the employment of one of three *a priori* principles. This is true of all three Analogies. However, the Analogies are also supposed to be connected to three different kinds of judgements that we find ourselves making. This, we have seen, can be made sense of in the cases of the First and Second Analogy, but so far the connection has not been made in the case of the Third Analogy, which it should be, to make this interpretation complete.

One difficulty in interpreting the Analogies with regard to Kant's overall project of deriving the synthetic principles from the table of categories and the table of categories from the table of judgements is that by the time we get to the discussion of the principles, i.e. in this case: the Analogies, the forms of judgement have dropped out of the discussion. I guess there might be many reasons for this. One could be that Kant, rightly or wrongly, thought that the individual connections between principles, categories and forms of judgements were just so obvious and simple as to be in need of no further explanation. Alternatively it could be that Kant at this stage was so caught up in the general thrust of his project that he forgot to consider and discuss the details of the connections between the various stages of his arguments. Or again, he may have held that the general thrust and direction of the arguments was the important thing, and that the fine details were of less consequence. Either way it would seem not too controversial to suggest that there may be scope for improvement and corrections with regard to those aspects of the argument on which Kant remains silent.

I have already argued that the First Analogy is related to transformational judgements rather than to categorical ones as Kant claims, and now I shall claim that also in the case of the Third Analogy, we need to modify the original table of judgements. According to Kant, the form of judgement that corresponds to the third Analogy, and which thus amounts to a judgement of simultaneity is the *disjunctive* judgement, but it is hard to see how this is going to work. For one thing, simultaneity is a *temporal* relation – whereof indeed the Analogies are supposed to explain the possibility of our knowledge – but a disjunctive judgement makes no obvious reference to time. Take the one example Kant gives, in the discussion following the specification of the table of judgements.

> "The world exists either through blind chance, or through inner necessity, or through an external cause." Each of these propositions occupies one part of the sphere of the possible cognition about the existence of the world in general, and together they occupy the entire

> sphere. To remove the cognition from one of these spheres means to place it in one of the others, and to place it in one sphere, on the contrary, means to remove it from the others. In a disjunctive judgement there is therefore a certain community of cognitions, consisting in the fact that they mutually exclude each other, yet thereby determine the true cognition **in its entirety,** since taken together they constitute the entire content of a particular given cognition.[426]

There is certainly no *explicit* reference to simultaneity here, and it is well nigh impossible to find any implicit reference to it either. What, to begin with, is it that is supposed to be simultaneous? Certainly not the possible state of affairs described by each of the propositions since they mutually exclude each other! Indeed, in this example the entire judgement seems to be *analytic. Nothing* could simultaneously satisfy more than one of the predicates *'exist through blind chance'*, *'exist through inner necessity'* and *'exist through an external cause'*, which means that the example judgement is not empirical in Kant's sense at all – hence not part of a possible experience.[427] But maybe Kant has merely chosen a bad example, and *empirical* disjunctive judgements imply simultaneity? But no - take an ordinary empirical, disjunctive judgement:

(23) Either Paul is in London or he is in Manchester

This is certainly an empirical claim, which might be true or false, but in no way does it entail the simultaneity of Paul's being in London and in Manchester. On the contrary, it *excludes* the simultaneity thereof. But then, maybe it is the simultaneous existence of London and Manchester that is entailed by (23)? But no: Suppose that Paul is in fact in London and that, unbeknownst to me, Manchester has been utterly destroyed by some freak cataclysmic event. I would then still be stating a truth if I were to utter (23) though London and Manchester could no longer be said to exist simultaneously.

In other passages, Kant seems to think that the disjunctive judgement is related to or exemplary of the part-whole relation. And one might think that the disjunctive judgement is related to our knowledge of parts coexisting to form a whole, hence to

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426 A74/B99

427 Kant holds that although analytic judgements are *true* or *false,* their truth is independent of experience, and they do not increase knowledge.

See A7–8: "[T]hrough analytic judgments our cognition is not amplified at all…"

A258/B314: "[A]n analytic [assertion] takes the understanding no further…"

some sort of simultaneity; but as we shall see, Kant's assertions in this regard hold of *conceptual* relations, rather than of *objective* relations and so will do no good as grounding knowledge of objective simultaneity.

a) The Community of Judgements

In the *Logic*, Kant gives a slightly fuller discussion of the disjunctive Judgement, and also provides one more example. From these, it seems quite clear that the notion of *community* that Kant attaches to the disjunctive judgement is essentially irrelevant to the concerns of the Third Analogy.

The example judgement that Kant gives is:

> A scholar is either a historian or a rationalist[428]

Kant clearly takes dichotomy of scholarship into historian and rational to be jointly exhaustive and mutually exclusive:

> I determine that these concepts, as to sphere, are parts of the sphere of the [concept of] scholar, but not at all parts of each other, and that all taken together are complete.[429]

But that precisely makes the judgement analytic, hence not one that forms an interesting part of experience.

The further discussion shows conclusively that Kant is concerned with how several more specific concepts together can exhaustively subdivide a more general concept such that anything that falls under the higher concept will fall under exactly one of the lower concepts. Of such a set of concepts Kant holds that insofar as this is expressed in a judgement, then the extension of the lower concepts are taken to be related to the extension of the higher concept as parts to a whole *"(complementum ad totum)"*[430] The complete listing of the species of a genus would be an example of such a relation of concepts.

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428 Log. §29

429 Ibid.

430 Ibid.

Now, there is nothing in Kant's discussion that necessarily limits it to analytic judgements, but from his admittedly sparse examples, these seem to be what he had in mind. Now, we can make sense of such judgements being synthetic, yet true, for instance:

(24) Any earthly sapient being is either male or female

This is clearly synthetic – there is no contradiction in supposing that worker bees could have evolved so as to be sapient – but again, this judgement and the ability to make it has nothing to do with *time*, and certainly not to *simultaneity*. We can indeed say that the extension of 'sapient male' and the extension of 'sapient female' together make up the extension of 'sapient being', but there is no need for simultaneity here. If all human males were suddenly to die, (24) would still be true, and there would still be sapient beings on earth, but the sapient females would then not exist simultaneously with sapient males.

9.4 The *Compositum Reale*

Clearly, to defend the broad thrust of the Kantian project, I need to show that there is a distinct form of judgement which amounts to an assertion of typical simultaneity in the same way that transformational judgements amount to assertions of typical persistence, and hypothetical judgements amount to assertions of typical succession. And indeed, I believe that such a form of judgement exists, though it has no set of canonical verbal expressions as is the case with the first two forms of relational judgements.

Now, the causal hypothetical judgement clearly has the form of a *conditional* judgement. Since there are also other forms of conditional judgement, e.g. the material implication, we could term the Kantian "hypothetical" judgements 'causal conditionals'. But if there are casual conditionals we should also be able to countenance causal bi-conditionals – cases where A causes B but where B also causes A. The classic case of the chickens and the eggs would seem to be an adequate example.

Note how well this fits with Kant's description of the conditions for knowledge of simultaneity in the section on the Third Analogy:

> [E]ach substance (since it can be a consequence only with regard to its determinations) must simultaneously contain the causality of certain determinations in the other and the effect of the causality of the other, i.e., they must stand in dynamical community

> (immediately or mediately) if their simultaneity is to be cognized in any possible experience.[431]

This reconstruction has the further benefit of making sense. It seems that the only way we can be sure that some set of phenomena will always occur together is if they mutually cause each other, i.e. form a *physical system.* Natural science seems frequently to be concerned with determining what phenomena go into physical systems, and the correct determining of such relationships are important scientific achievements. Examples are the discovery that electrons, protons and neutrons together form atoms, that procreating males of any species always and only exist when there are also procreating females of that species and that magnetic north poles are always attached to magnetic south poles. This illustrates that, to an even higher degree than in the former two Analogies, the possibility of *systematic*, *scientific* knowledge plays a crucial, yet understated part in Kant's arguments.

9.5 Systematic Experience

Having completed the interpretation of the Three Analogies of Experience, we have seen that the ability to make transformational judgements requires us to organise our concepts such that we are able to determine the relative persistence of features of our world; hypothetical judgements to determine recurring successions and bi-conditional judgements to determine physical systems.

Since it is clearly useful to know e.g. that the ground is likely to be here tomorrow, that the apples will probably ripen in another fortnight and that if you want more chickens you should also keep a rooster or two, we can give an evolutional/teleological explanation of why we should have *this* kind of a conceptual scheme rather than another, *and* we can validate the pure concepts without needing to postulate any knowledge-transcendent, metaphysical entities.

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[431] A212–3/B259

Chapter 10 – Epilogue

With this, I have concluded my reconstruction of a Kantian argument for the validity of Pure Concepts and Principles and thus presented a theory for the origins, validity and bounds of our knowledge of causal determinacy. In future work I hope to be able to show how this can be used to provide a resolution to the Antinomy of Freedom and thus to give the required foundation for Kant's moral philosophy.

Any reader who has followed the arguments of this thesis through to the end might have been surprised to discover that in giving an alleged defence of the main lines of argument in Kant's *Critique of Pure Reason* I have barely mentioned Transcendental Idealism. On the other hand, he might also be relieved.

Chapter 11 – Appendices

11.1 The revised tables

a) The Table Of Judgements

Simple judgements	Complex judgements
1. Quantity of Judgements	
Singular	
Particular	
Universal	***3. Relation***
	Transformational
2. Quality	Conditional
Affirmative	Bi-conditional
Negative	
Exclusive	
4. Modality	
Problematic	
Assertoric	
Apodictic	

The revised table of judgements

b) The Table Of Categories

Mathematical categories	**Temporal categories**
1. Of quantity	
Unity	
Plurality	
Totality	***3. Of relation***
	Substance and Attribute
2. Of quality	Cause and Effect
Presence	Interdependence
Absence	
Exclusion	
4. Of modality	
Possibility – Impossibility	
Existence – Nonexistence	
Necessity – Contingency	

The revised table of categories

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11.3 Specimen judgements

11.4 Figures

11.5 Index