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Definitions of Kant's Categories

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Abstract

The consensus view in the literature is that, according to Kant, definitions in philosophy are impossible. While this is true prior to the advent of transcendental philosophy, I argue that with Kant's Copernican Turn definitions of some philosophical concepts, the categories, become possible. Along the way I discuss issues like why Kant introduces the "Analytic of Concepts" as an analysis of the understanding, how this faculty, as the faculty for judging, provides the principle for the complete exhibition of the categories, how the pure categories relate to the schematized categories, and how the latter can be used on empirical objects.

Definitions of Kant's Categories[1]

According to Kant, mathematics offers paradigmatic cases of definitions and starts its inquiries with them. In philosophy, definitions will come at the end of the inquiry not at the beginning (*KrV*, A730/B757-A731/B758), if they are possible at all. The consensus view in the literature seems to be that Kant thinks definitions in philosophy are impossible.[2] While this is true prior to the advent of Kant's transcendental philosophy, I argue that with his 'Copernican Turn' Kant maintains we can define some philosophical concepts, the categories, which are the most general concepts of an object.[3] Seeing this will both offer a clue as to why Kant thinks the categories form a complete system that can guide us in the material sciences and clarify how Kant thinks he is proceeding from first principles in the "Transcendental Analytic," the part of the *First Critique* that does the most work to lay out his positive view.

To begin with (§1), I will clarify exactly the nature of the dispute over definitions. Next (§2), I'll explicate the requirements on, and kinds of, strict definitions. I will then (§3) look at the main evidence that according to Kant definitions of philosophical concepts are impossible. In (§4) I argue Kant *should* maintain definitions of the categories are possible because of his deployment of the synthetic method in his analysis of our faculty for judgment. Next (§5), I discuss a few passages

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[1]In preparing the final version of this essay I received helpful comments from Lisa Shabel and Emily Carson. I've presented earlier versions of this material to audiences at a workshop on the table of categories at Merton college Oxford, and the 2011 Princeton, Penn, Columbia, conference in the history of philosophy. In addition this essay has also benefited from the feedback of Ralf Bader, John McDowell, and Karl Schafer. I also owe special thanks to Steve Engstrom and Anja Jauernig, both for comments on the paper and insights gained through their seminars on Kant.

[2]There are, to my knowledge, nine substantive treatments of the subject of Kant's view of definitions. In all of them the question concerning the possibility of philosophical definitions is answered negatively. (Beck, 1956) is the essay which most directly addresses the subject of definition and most of the subsequent treatments follow his to a greater or lesser degree. The others are: (Stuhlmann-Laeisz, 1976, §6), (Capozzi, 1981, p. 424), (von Wolff-Metternich, 1995, §4:1.1), (Carson, 1999, §4), (Maddy, 1999, §2), (Dunlop, 2005, ch. 5), (Dunlop, 2012, §2), (**?**, p. 200-201). Of these, Rosenkoetter's comes closest to admitting the possibility of defining the categories, since although he maintains Kant rejects this, he nonetheless holds that the categories together give a real definition of "the object as such [*Gegenstand überhaupt*]." For an illuminating treatment of Kant's views on definition in the pre-critical period in relation to those of Leibniz and Wolff, see (Sutherland, 2010).

[3]I do not think that this exhausts the philosophical definitions that become possible according to Kant. In particular, he also thinks that many concepts in morals as well as in the metaphysics of extended matter can be defined, and this is so in a more robust way than the categories, because these definitions also make possible the construction of their objects (albeit in quite different senses). At one point it even sounds as if Kant thinks he can define the concept of time as "the order of things, in so far as they follow one after the other" (*Busolt Logic*, 24:659), but it isn't clear to me how he would secure this definition. I will not discuss these further kinds of philosophical definitions here.

where I think Kant is *in fact* sketching definitions of the pure and schematized categories from the end of the "Transcendental Analytic" of the *First Critique*. In (§6) I address an objection to the account that will clarify how the definitions of the schematized categories get their reality.[4]

1   The Standard View

Definitions in the strict sense, according to Kant, are exhaustive, precise, and original, exhibitions of a concept of a thing. I will return to exposit each of these three marks of strict definitions, but before this we should specify what is in dispute. Kant uses the term '*Erklärung*,' which gets translated as 'definition' or 'explanation,' in a number of different senses and these include a range of possible explanations that may fall short of definitions in the strict sense. This is because "the German language has for the [Latinate] expressions **exposition, explication, declaration** and **definition** nothing more than the one word 'explanation' [*Erklärung*]" (*KrV*, A730/B758).[5] In this essay I will use the term 'definition' to refer to definitions in Kant's strict sense, whereas I will use 'explanation' to encompass the wider sense of '*Erklärung.*'

What I will be concerned with is definitions of the categories in the strict sense. Although other commentators have allowed that a kind of explanation, an 'exposition,' of the categories is possible, they have denied the possibility of defining them strictly. Expositions articulate the other concepts or marks that are thought in the concept. One example is 'space is not an empirical concept' (*KrV*, A23/B38).[6] Expositions differ from strict definitions in that they are cautious about their exhaustiveness (*JL*, §102, §105). And in our example it is clear that only part of what is included in

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[4]All of my references to Kant's works will be to the Akademie Ausgabe (vol:page number), except in the case of references to the *Critique of Pure Reason*, which will be cited using the pagination of the first (A) and second (B) editions. I will also usually abbreviate the work in question as follows: *KrV (Critique of Pure Reason), Prol. (The Prolegomena to Any Future Metaphysics), MAN (Metaphysical Foundations of Natural Science), JL, (Jäsche Logic), Refl. (Reflexionen).* Translations are my own, but were done in consultation with the Cambridge editions.

When interpreting Kant's logical views we are faced with the problem that Kant did not himself author a treatise on logic. Rather what we have are fragmentary notes contained in the *Reflexionen zur Logik* and various transcripts of his lectures on logic taken by students. Of these the *Logic* prepared by Jäsche, which was authorized by Kant, and prepared consulting his handwritten notes, stands out as the privileged one. Here I am agreeing with Young, among others (Kant and Young, 2004, p. xix). For more on the respectability of Kant's various logical remarks see (Kant and Young, 2004, p. xvii-xix) and (Boswell, 1988).

[5]In Kant's German, "***Exposition, Explication, Declaration*** *und* ***Definition***," compared with "*Erklärung*"

[6]Another example is the exposition he gives of the faculty of desire. This is the faculty of a being to be the cause of the object of one of its representations, through that representation (*KpV*, 5:9n). In the end, we might discover that the concept of this faculty includes that it is always determined through pleasure, but this is left open in Kant's exposition.

this concept is presented.[7] In contrast with the standard view, I argue that on Kant's account there is a way in which we can achieve strict definitions of the categories, which unlike mere expositions, will be exhaustive.

2   Definitions in General

In the *First Critique* Kant characterizes definitions in the following way: "As the expression itself reveals, to define properly means just to exhibit originally the exhaustive concept of a thing within its boundaries*" (*KrV*, B755). He then expands on this in the footnote:

> * **Exhaustiveness** signifies the clarity and sufficiency of marks; **boundaries**, the precision, that is, that there are no more of these than belong to the exhaustive concept; **original**, however, that this boundary-determination is not derived from anywhere else and thus in need of proof, which would make the supposed definition [*Erklärung*] incapable of standing at the head of all judgments about an object. (*KrV*, B755n)

In this section I will give an exposition of what Kant means by Exhaustivity, completeness, and originality, as well as his distinction between nominal and real definitions.

Since Frege we have largely grown accustomed to extensional adequacy as the mark of sufficiency in definitions. This is only one small component of definitions on Kant's account. In general, the first thing it is crucial to note when considering what Kant means by each of these terms, however, is that they each concern not so much the extension (*Umfang* or *Sph*äre) of the concept, which includes the concepts and objects **under** it, as the content or intension (*Inhalt*) of the concept, the other concepts contained **in** it.

Briefly, to exhaustively or completely exhibit the marks in a concept's intension is to exhibit all of its marks. For example, the explanation 'a line whose points are all equidistant from a center point' gives all the content of the concept *circle* because together the genus *line* and specific

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[7]We need not dwell on the differences between the other various kinds of explanations, but briefly: descriptions are expositions that are not precise (*JL*, §105); declarations are arbitrarily (*willkürlich*) invented concepts for which it isn't certain whether the object can be made (*KrV*, A729/B757). '*Explication*,' which seems to be the specification or spelling out of the content of an expression (*Refl.*, XVI:577, 2922, 2923; XVI:579, 2931), is a less used term. It is very close to '*exposition*' as the making distinct of a concept, although expositions can be given either of concepts or of appearances, while explications cannot be given of appearances. '*Explication*' is often contrasted with '*declaration*' (*Refl.*, XVI:585, 2950). Finally, *Erörterung* is a term Kant will gloss as *Exposition* (*JL*, §105), and I do not take him to distinguish these.

difference *whose points are equidistant from a center point* give all of the marks needed to identify any instance of a circle. Falling short of having all of the marks contained in the concept will mean, however, that the exposition cannot be exchanged for the original concept without a loss in content. For example, *yellow metal* has less content than *gold*—fewer marks in its intension. This means that *yellow metal* is less discriminating, it rules out fewer instances than the richer concept *gold*.

To exhibit the concept within its boundaries is to do so precisely—to not include more marks in the exhibition than belong to the concept's intension. For example, 'a line whose points are all equidistant from a center point' gives you all of the marks you need to identify circles and no more. Uncontroversially, the addition of *yellow*, as in 'a yellow line whose points are equidistant from a center point,' would make the definition imprecise and damage the concept by excluding instances to which the concept legitimately applies. There is a bit of an ambiguity as to whether precision also excludes attributes of the thing, which are marks that it necessarily has. For example, if instead we were to say 'a curved line...', we would add an extra mark, *curved*, which, although it may make applying the concept easier, does not belong to the precise definition of *circle*. Considering the wording of the footnote at A727/B755 on its own, such marks do 'belong to' the exhaustive concept, and so would seem not to be excluded from the precise concept.[8] Of course, a few pages later Kant does exclude explicitly 'curved' from the precise definition of circle (*KrV*, A732/B760), and this does suggest that 'precise' in the footnote should be read as excluding them as well.[9]

The final and most difficult condition on an explanation's being a definition is that it be original—that the boundary-determination delimiting the precise concept "is not derived from anywhere else and thus in need of proof, which would make the supposed definition incapable of standing at the head of all judgments about an object" (*KrV*, B755). The explanation 'a line all of whose points are equidistant from a center point' is original in that the exhaustive, precise concept of a circle is derived from nowhere else besides it. If it were, then the definition would not be capable of standing at the head of all demonstrations about circles, and so would fail to give us

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[8]The possibility of reading the footnote in this way was suggested to me by Stephen Engstrom.

[9]Beyond the *First Critique*, most of the logical works, even the pre-critical ones, characterize precision through an analogy with putting a fraction into minimal terms (e.g. *Bloomberg Logik*, 24:263-264; *Refl.*, 2979). The examples Kant gives of marks that would be excluded from such a definition in minimal terms include *curved*, or are often similar, excluding divisible from 'the body is extended' (*Logik Pölitz*, 24:575). All of which suggests that if he did intend precision in the weaker sense in the footnote, he was breaking with prior usage.

what we want out of such a definition.

Understanding what this amounts to concretely is tricky. If we do not read the footnote at A727/B755 as excluding attributes (like 'curved') from the precise concept then a clear role for originality remains in determining the boundaries of the concept specified by the definition. For, it would then be originality that ensures only the marks essential to the concept—those which are primitively constitutive of it—are included in its definition, and that other marks, like 'curved,' which should be derived from the definition in further theorems, are excluded.

If we read precision as excluding attributes, finding a role for originality is more difficult. For contrast, we can return to our exposition of the concept *gold* as a yellow metal. Gold is a substance that we have discovered. We haven't arbitrarily made its concept, but have developed it through the experience of gold, which has included its being a yellow metal. In explaining *gold* as a yellow metal we learn that anything true of all metal or yellow things will be true of it. So we learn something about *gold* that can stand at the head of some judgments about gold. But the collection of judgments that can be made about gold on the basis of its being yellow and metal far from exhaust the judgments that can be made about it, and so we can tell that we do not here have a proper definition. For this we would need to be able to show that the boundary determination of the concept *gold* is derived from exactly where the definition claims and no where else. But the explanation *yellow metal* doesn't make any claims about the boundaries of the concept *gold*, so it couldn't be original.[10]

According to Kant, however, *Circle* is an invented concept that we arbitrarily or electively (*willkürlich*) make. In making this concept we specify the marks something must have in order for it to be a circle—it must be a line; its points must be equidistant from a center point. The key to how our definition of *circle* can be original is that this explanation of the concept includes a specification of how to make instances of it. For, in describing circles as lines whose points are equidistant from a center point, this definition gives us a procedure for drawing circles—draw a line

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[10]The chemical formula for the element, however, comes closer to giving a boundary determination that allows the concept to stand at the head of all judgments about gold things. Nonetheless, the sub-atomic structure of certain samples of the element may lead to those samples exhibiting novel behavior that goes beyond that which is fixed by its atomic structure. Accordingly, although an explanation of gold in terms of its atomic structure, which presumably fixes most of its macro- and mesoscopic properties, comes very close to fixing the precise boundaries of the concept, this too will not suffice, strictly speaking, for a definition. This would be no surprise to Kant, who thought empirical concepts were not definable (*KrV*, A727/B755).

around a point, keeping the distance between the line and the point constant. With this procedure we have a rule for applying the concept: anything that we can trace in thought in this way will be circular. This, in turn, ensures the concept will apply to all and only circular things, and thus that the concept's use is exactly and securely what we take it to be. Accordingly, it is through this procedure for creating circles that the precise, complete boundaries of the concept are secured, and originality for the explanation is achieved.

There is a final objection to our definition of circle that is worth considering. Because the procedure for constructing circles depends on space, an understanding of which is not explicitly articulated in the definition, one might think that our definition is flawed. This dependence is apparent in the conditions on the synthesis of the concept, the action of the imagination in drawing circles. All spatial objects must comply with these conditions on pain of their unreality qua spatial object. (For example, the concept *two-sided plane figure* or *round square* are not contradictory concepts, but are also not constructible.) For this reason, this definition may not seem to stand at the head of all judgments about *circles*, without a supplementary articulation of the concept of space and its correlative conditions.[11]

Although we study space in geometry, learning about it through constructing figures, we do not learn about the relation between our concepts of spatial figures and space in geometry, but presuppose it.[12] A thorough investigation of this is beyond what I can offer here. Briefly, however,

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[11]We find something similar in the case of invented concepts of objects of experience like *Schiffsuhr*, a clock precise enough for the computation of longitude. Such a thing had not been invented in Kant's day. Until we have built one, until we have proved that it can be produced in accord with the conditions of objects of experience in general, we do not know that this arbitrarily made concept has a really possible object (cf. *KrV*, A729/B757). It may, like a perpetual motion machine, not be physically constructible.

Kant will sometimes call specifications of how to make empirical objects, like instructions for building such a clock, definitions. One example is "the definition of cinnabar: mercury and sulfur sublimated produces cinnabar" (*Busolt Logic*, 24:660). Such a definition, made out of empirical concepts, however, is not a counterexample to Kant's claim that empirical concepts cannot be defined. This is because these are technical concepts for making things, not the kind of empirical concept we might mistakenly want to define in an empirical science.

I think one way at this distinction is to note that although the matter for this definition is empirical, the definiendum is made *a priori*, since the concepts are put together through an act of will, not through an exposition of given appearances. Both Beck and Dunlop, however, will count this kind of invented concept as *a postiriori* made (Beck, 1956, p. 184); (Dunlop, 2012, p. 96). I take this latter class, however, to contain only those concepts that we arrive at through hypothesis in empirical natural science, and which we test against appearances through observation (*JL*, 9:141). My reason is that I take the nature of the synthesis involved in the creation of the concept to be more important than the kind of matter combined, in determining whether a concept is *a priori* or *a posteriori* for Kant. Of course, I nonetheless allow that there is an important difference between *Schiffsuhr* and *circle* insofar as the matter of the concepts and the conditions on construction are empirical or *a priori* respectively.

[12]One place where the kind of relation I have in mind comes out is in a passage of Kant's on biangles: "In the

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the general point is that some topics relevant to a science are not themselves treated in the science. For example, the status of mathematics as cognition depends on its relation to appearances (cf. e.g. *KrV*, B147, A157/B196), and this is not studied in mathematics, but philosophy.[13] Further, as regards the specific issue of the relation between geometrical concepts and space, I think it is this kind of relation between space and geometry or its concepts that is at least part of what Kant sets out to establish in his "Transcendental exposition of the concept of space" (*KrV*, B40-41).[14] This exposition lies outside of geometry and concerns its possibility; it is not a topic for geometry itself.[15] In this way, if we can agree that according to Kant geometry does not treat the nature of the dependance of its concepts on space, then perhaps we can begin to see why no supplementary articulation of the nature of this dependance is necessary for adequate definitions of geometrical concepts.[16]

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concept of a figure that is enclosed between two straight lines there is no contradiction, for the concepts of two straight lines and their intersection contain no negation of a figure; rather the impossibility rests not on the concept itself, but on its construction in space, i.e. on the conditions of space and its determinations; but these in turn have their objective reality, i.e. they pertain to possible things, because they contain in themselves *a priori* the form of experience in general" (*KrV*, A220-221/B268). Circles, like biangles, are connected to space. But instead of this connection accounting for their impossibility, circles are possible. And in both cases the possibility or impossibility of the figure in question depends "on the conditions of space and its determinations"—whether the concept describes a possible limitation of space or not (cf. *KrV*, A619/B647). It is the relation between the concept circle or biangle, and space, that I suspect is taken for granted in geometry, according to Kant. For one discussion of the topic in the secondary literature, which also situates it within a wider discussion of the transcendental exposition of space, see (Shabel, 2010, esp. p. 102-108).

[13]The relation of mathematics to appearances is studied in philosophy because the principles of mathematics are made possible through the principles of the pure understanding (*KrV*, A162/B202), the study of which belongs to philosophy. Specifically, Kant says that the application to experience of the principles of mathematics (which are derived from intuition not the understanding) still always rests on the pure understanding (*KrV*, A159/B199). And the principle of the pure understanding in question is "all appearances are, as regards their intuition, **extensive magnitudes**" (*KrV*, B202). He goes on to call this the "transcendental principle of the mathematics of appearances" (*KrV*, A165/B206), and explain that this is the principle which ensures that mathematics governs appearances, objects of experience. So it is this principle, treated in philosophy, that ensures the objective validity of mathematics.

[14]Introducing his topic Kant says: "I understand by a **transcendental exposition** the explanation of a concept as a principle from which insight into the possibility of other synthetic *a priori* cognitions can be gained. For this it is required 1) that such cognitions actually flow from the given concept, and 2) that these cognitions are only possible under the presupposition of a given way of explaining this concept" (*KrV*, B40). In the surrounding exposition, the concept in question is space, and the other synthetic *a priori* cognitions are those of geometry. I take the first paragraph of the exposition (the one spanning B40-B41) to be concerned with establishing this connection between our representation of space and our cognition in geometry.

[15]Another place where the dependence of geometry on philosophy for securing the relation between its constructions and space comes to the fore is in Kant's discussion with Eberhard. For example, in one suggestive remark Kant says, "the question, however, as to how this single infinite space is given, or how we have it, does not occur to the geometrician, but concerns merely the metaphysician" (20:420-421), (Kant and Allison, 1973, English trans. p. 176). I take the surrounding context to fill out this remark in the direction I am suggesting.

[16]Before leaving the discussion of completeness, precision, and originality, I should note that my focus has been on the account of definitions given in the *First Critique*. In the works on logic Kant approaches definitions from a slightly different angle. For example, in the *Jäsche Logic* he says, "a definition is a sufficiently distinct, and precise concept

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Kant divides proper complete, precise, and original definitions into merely nominal (or logi-cal)[17] and real definitions, which also secure the application of the concept to objects. A Nominal definition of a concept will consist in giving a genus under which the concept stands, along with a specific difference (or differentia). The specific difference distinguishes the concept from the other concepts in the community of concepts that both divide the genus and together, taken as a whole, make it up. Nominal definitions are useful for comparing things thought under their definiendum to other things in part because they place the definiendum in a porphyrian tree. One paradigmatic case is 'a human being is a rational animal.'

What is needed for the definition to be real, beyond getting the definition of the concept right as a nominal definition will, is that it also contain a mark, a schema, that makes the concept securely usable in application to objects (cf. *KrV* A241-2n; *KrV* B302-3n). This application is secured in one of (at least) three ways, but in each the definition will indicate the nature of the thing, its real essence, which is the ground of its possibility. Paradigmatic cases of real definitions can be found in mathematics: e.g. 'a triangle is a three sided figure.'

In addition to counting as a proper nominal definition, the first grade of real definition will also provide "a clear **mark** by means of which the **object** (*definitum*) can always be securely cognized, and that makes the concept that is to be explained usable in application" (*KrV*, A241n).

[*zureichend deutlicher und abgemessener Begriff*]" (*JL*, §99, cf. *KrV*, B759). I take the differences between the terms used in the logical works and the *First Critique* to be largely insignificant, but in the *Logic* there is a shift in focus and perhaps a loosening. '*Abgemessen*' I take to be the germanic equivalent of the latinate '*Präcision*.' '*Zureichend deutlichkeit*' will have two sides, sufficient extensive and intensive distinctness (cf. *JL*, Intro §VIII, esp. XI:62-63). The former will roughly correspond to exhaustiveness, while the latter will be closely linked to originality. In shifting to talking about sufficiency of distinctness, Kant is deemphasizing the explanatory elements of the definition—its originality and exhaustivity—and focusing on the logical form granted through these elements. Furthermore, in the context of general logic, which will govern all sciences, because sufficiency is relative to a use, we can perhaps see the general point that what exactly is required for strict definitions is relative to a science coming to the fore, insofar as what will count as sufficient for them may be different in different sciences.

Another reoccurring theme in the logical works is the requirements or perfections of definitions which sometimes track the four headings of the functions of thinking (cf. *JL*, §107, 9:144; *Busolt Logik*, 24:658-660; *Refl.*, 16:588-600; *Wiener Logik*, 24:921-922; *Pölitz Logik*, 24:574-575; *DW-Logik*, 24:759-760; *Philippi Logik*, 24:458; *Blomberg Logik*, 24:263*ff*). Some requirements these give, which do not get explicitly touched on in the *Critique*, are that definitions should not be tautologies, they should not be circular, and they should not explain the obscure by the equally obscure.

[17]Beck distinguishes 'nominal' and 'logical,' using 'logical' as the name for specifically analytic nominal definitions. I do not see evidence for thinking this follows Kant's usage. Although it is true that Kant will often say 'logical nominal definition,' what we have here are two adjectives describing the same kind of definition, not a specific kind of nominal definition. Kant tends to use 'logical' when he wants to emphasize that the definition is of a thing's concept, or specifies a logical essence, and tends to use 'nominal' when he wants to emphasize that the definition is of a name or a word, and although he will use both to contrast with '*Real-*' or '*Sach-Erklärungen*,' '*Nominal-*' or '*Namen-Erklärungen*' seems to be his preference. Nonetheless, I don't think these preferences in use constitute a distinction in kind as Beck does.

In his notes, Kant sometimes calls such definitions which do not generate their objects 'diagnostic' (*diagnostisch/dianoëtisch*).[18] Kant often uses the term "definition" in a sense that encompasses this grade of real definition (especially in the *First Critique*). This kind of definition grants insight into the real formal possibility of things—their formal real essence—by indicating an element in their discursive form: a discursive mark by means of which their object can always be securely cognized. The possible definitions of the schematized categories will be of this kind.

On the second, stricter grade of real definition the concept must provide for the generation of its object. "Mathematical definitions, which exhibit the object in accordance with the concept in **intuition**" are examples (*KrV*, A242n). Usually Kant uses this generative feature of mathematical concepts to explain why they can be defined so successfully—why they can surely contain neither more nor fewer marks than belong to the concept and why the explanation of the concept is derived from nowhere else, except the definition (*KrV*, A730/B758)—but he doesn't intend the meaning of the term 'definition' to include it. This kind of definition grants insight into the formal possibility of things by indicating not only a discursive mark, but also a rule for generating intuitive forms, through which their objects can be securely cognized.

Generated mathematical objects, however, are not objects properly speaking—e.g. objects of experience, God—but are merely *a priori* forms of objects (*KrV*, A224/B271). Objects of experience, rather, are the objects that are in fact the ultimate source of meaning for the concepts of mathematics, since without this connection these concepts would be entirely devoid of sense (*KrV*, B299). Accordingly, if there were a cognition that generated its corresponding object (the one to which its sense and significance can ultimately be traced) and not merely a form of this object, then it would be properly understood to attain a further third grade of reality. Such a cognition would comprehend its object, since it would be self-sufficient, generating the object it knows, and our definitions cannot attain this degree of reality, even in mathematics (*JL*, 9:65). If they could, then we could know things as the intuitive intellect does, and we would be able to give not only formal, but also material real definitions of objects, through which we would have insight into the real natures of things as they are in themselves.

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[18]*Refl.*, XVI:609-610, 3001, 3002, 3003.

3   Against Definitions of the Categories

What Kant says about the possibility of strict definitions in philosophy may seem contradictory since, at a number of places even in his published writings, he seems to say they are possible, only to say a page or two later that they are not.[19] The most seemingly damning argument against the possibility of properly defining the *a priori* given concepts of philosophy, which all prior commentators take to be decisive, runs:

> Strictly speaking no concept given *a priori* can be defined e.g., substance, cause, right, equity, etc. For I can never be certain that the distinct representation of a (still confused) given concept has been exhaustively developed unless I know that it is adequate to the object. But since the concept of the latter, as it is given, can contain many obscure representations, which we pass by in our analysis though we always use them in application, the exhaustiveness of the analysis of my concept is always doubtful, and by many appropriate examples can only be made **probably** but never **apodictically** certain (*KrV*, A728/B756-A729/B757).

There are two factors, either of which alone would seem to rule out the possibility of defining any of the *a priori* given concepts of philosophy, even the categories. First, unlike mathematics whose proper objects are in a sense merely forms of objects produced in *a priori* intuition, the proper objects of the categories are objects of experience and these cannot be defined. Second, the investigation of *a priori* given concepts proceeds by way of analysis, which is a procedure that usually has no guarantee of completeness.

Regarding the first point, I concede that there are two senses in which the categories cannot be defined. First, of course, at least as long as they are considered theoretically, their definitions will not generate objects of experience. Second, the categories "can be exhibited *in concreto* if one applies them to appearances; for in the latter they have the proper material [*den Stoff*] for a concept of experience [*Erfahrungsbegriff*], which is nothing but a concept of the understanding *in concreto*" (*KrV*, B595). Considered *in concreto*, as concepts of experience (for example, as quite

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[19]For example, on the one hand at B757 he seems to rule them out entirely—"thus there remain no other concepts that are fit for being defined than those containing an arbitrary synthesis which can be constructed *a priori*, and thus only mathematics has definitions"—on the other, a page later, at B758 he suggests that they are possible and that "in philosophy the definition, as distinctness made precise, must conclude rather than begin the work."

In the "Phenomena and Noumena" chapter a similar seeming contradiction can also be found. And right after presenting the table of categories, Kant coyly says he might be in possession of definitions of them, although he will spare himself their presentation. I will discuss these passages further in §5.

general empirical features of bodies), the categories also cannot be defined (*KrV*, A728/B756).[20] Nonetheless, considered as *a priori* given concepts of a natural object in transcendental metaphysics (or the metaphysics of extended matter), I will argue they can be. I will return to a sophisticated form of this objection in §6.

As regards the second point, traditionally when philosophers proceed securely (in a manner ensuring objective validity) they analyze given representations. Accordingly, these analyses are always in danger of having overlooked some feature and in any case are not original, since they do not secure the boundaries of the exposited concept. What will be crucial for responding to this point is seeing exactly how Kant's Copernican use of the synthetic method makes possible a different means of investigating the concepts of philosophy that, at least for some of them, unlike their mere analysis, will secure their boundaries through their original exposition. I will sketch how Kant thinks this is possible in the next section.

In the supposedly decisive passage I propose that Kant has in mind not so much transcendental, as traditional, philosophy. Traditional philosophy does not have any means for securing the boundaries of its expositions. If, however, there were somehow a way to form legitimate definitions in philosophy that was not analytical, then perhaps the completeness of these expositions could be secured.

4 The Possibility of Definitions of the Categories

In this section I argue that Kant should maintain that an exhaustive exhibition of the categories is possible. To do this I look to Kant's deployment of the synthetic method through his Copernican Turn (§4.1). This will include an analysis of our faculty for judgment, which is the principle from which the system of categories is derived (§4.2). Specifically, this derivation happens by way of the functions of thinking in judgment, which are what make the original exhibition of the categories possible (§4.3). This original exhibition, in turn, makes the exhaustive and precise exposition of the categories possible because it shows how they result from a division of the understanding (§4.4). Throughout this section I will be discussing the possibility of defining the categories in general. It

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[20]Although in the pre-critical 1772 *Philippi Logik*, Kant seems to think that *body*, unlike other empirical concepts, is general enough to be defined (24:457).

is only in the subsequent sections that I will treat the differences between possible nominal and real definitions of them.

4.1 The synthetic method & the Copernican Turn

Traditionally philosophy had either taken the *a priori* given concepts of metaphysics (like cause) as it found them and analyzed the marks contained in them (e.g. Locke, Hume), or it imitated mathematics by inventing its definitions first and then deducing consequences from these (e.g. Spinoza). The first procedure was an analytic one, associated with empiricists, the second, a synthetic one, associated with rationalists.

The analytic method "begins with the conditioned and grounded and proceeds to principles (*a principiatis ad principia*)," while the synthetic method "goes from principles to consequences or from the simple to the composite" (*JL*, 9:149). The analytic method thereby generally makes secure, incremental progress in philosophy by beginning with what follows and is evident, the objects, and formulating principles by generalizing from observations of these. The synthetic method, however, which begins with a proposal about first principles, characteristically lacked a way of securing the connection between its concepts and their objects, and as a result of these faulty foundations its orderly systems crumbled.

With his 'Copernican Turn,' however, Kant thinks that he has found a way to secure in metaphysics the connection between concept and object by adapting the synthetic method to philosophy's own purposes, instead of merely imitating its use in mathematics. Kant's use of the synthetic method begins with our cognitive faculty as its first principle, not a series of definitions.[21] His strategy is to investigate the structure that objects necessarily have in virtue of their being represented by us. What he recognizes is that mathematics and physics were put on the sure path of a science only when they internalized "that reason has insight only into what it itself produces according to its own design" (*KrV*, Bxiii). In both, this shift consisted in reason's no longer following nature by merely forming generalizations by induction from experience, but in reason's taking the lead,

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[21] There are two terms that get translated into English as 'principle:' *Grundsatz* and *Princip*. Kant usually uses *Grundsatz* narrowly to speak of fundamental principles that can be formulated into judgments, and which can be laws of nature. *Princip*, however, often means something closer to Aristotle's *arche* or 'starting points,' and can include faculties or concepts, as well as *Grundsätze*.

working from its concepts and principles, investigating according to its plan, and devising experiments to test its hypotheses. The 'Copernican Turn' is Kant's attempt to bring about an analogous transformation in philosophy. With it he tries to "get farther with the problems of metaphysics by assuming that the objects must conform to our cognition," rather than "that all our cognition must conform to objects" (*KrV*, Bxvi).

Kant's turn has two parts, corresponding to the passive and active components of our faculty of cognition, our faculties of sensibility and understanding. The first claims that objects must conform to the constitution of our sensibility, not our intuitions to the constitution of the objects themselves. By the end of the "Transcendental Aesthetic," Kant claims to have made intelligible how this will work, having shown the necessity of the distinction between objects as they appear to us in sensibility and things as they are in themselves apart from this faculty, as well as that we can have apodictic knowledge of the former because of their necessary relation to the form of our sensibility. The second claims that the concepts requisite for intuition to become cognition do not conform to the objects of experience, but that these objects conform to those concepts (*KrV*, Bxvii). In the "Transcendental Analytic" Kant explicates how this works, attempting to give satisfactory, i.e. apodictic, objectively valid "proofs of the laws that are the *a priori* ground of nature, as the sum total of objects of experience" (*KrV*, Bxix). It is this second branch of Kant's system that I will focus on, arguing that his way of preceding puts him in possession of the means for defining its *a priori* given concepts.

4.2   The faculty for judging as organizing principle

Let us now turn to these concepts of the understanding, which are the fundamental concepts of nature in general, the categories. When philosophy proceeds analytically, it begins with an analysis of experience, collecting seemingly primitive concepts piecemeal, as they are found, used *in concreto*. The particular kind of abstraction that it employs picks "out from ordinary [*gemeinen*] cognition the concepts that are not based on any particular experience and yet are present in all cognition from experience" (*Prol.*, 4:322-3). Accordingly, these concepts constitute the mere form of connections in experience. They are rules for experience in general, analogous to "rules for the

actual use of words in general" in a universal grammar applicable to all languages, culled from a language in use (*Prol.*, 4:323).

When assembling his list of categories, according to Kant, Aristotle proceeded through such an analysis of experience. Because he had no common principle to guide him in his search, he haphazardly "rounded them up as he stumbled on them" (*KrV*, A81/B107; cf. A67/B92). The completeness of his rhapsodic list—that there were just these fundamental concepts and no others— could supposedly be inferred only through induction, through his not having found more that also belong to the list.

With his Copernican hypothesis, which dictates one look first to the nature of our faculties for *a priori* insight into objects, Kant takes himself to be able to introduce order among the Aristotelian categories,[22] and to be able to explain why those categories that he includes in his list, but no others, belong there. For, first he distinguishes "the pure elementary concepts of sensibility (space and time) from those of the understanding" (*Prol.*, 4:323), which allows him to separate out the concepts in Aristotle's list of categories that are modes of pure sensibility (*KrV*, A81/B107).[23] Kant then "cast about for an act of the understanding that contains all the rest and that differentiates itself only through various modifications or moments" (*Prol.*, 4:323).[24] This act of the understanding consists in judgment. The functions in judgment are all of the possible modifications or moments of this single act, which together make up the faculty for judging. It is to this faculty for judging that Kant traces all actions of the understanding which, in the first section of the "Analytic of Concepts," he identifies with it: "the **understanding** in general can be represented as a **faculty for judging**" (*KrV*, A69/B94). And immediately after presenting the table of the pure concepts of the understanding Kant claims "this division is systematically generated from a communal principle [*gemeinschaftlichen princip*], namely the faculty for judging (which is the same as the faculty for thinking)" (KrV, A80/B106).

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[22]The original ten: substance, quality, quantity, relation, action, affection, time, place, position, state. As well as the post-predicaments: opposition, priority, simultaneity, motion, and possession.

[23]Time, place, position, priority and simultaneity.

[24]It should be noted that Kant's notion of 'action' is not our modern notion of intentional action (e.g. fixing a water heater). This is especially clear when he talks of the actions of our cognitive faculties. What he means by 'act' is, rather, the more traditional philosophical, scholastic sense of the term, as in, 'When one substance modifies another, the first *acts* on the second.' The 'acts' of the understanding will be modifications of our intellect—of the order possessed by the whole of our cognition.

It is the understanding, as a faculty for judgment, that Kant announces he will be attempting an analysis or anatomy (*Zergliederung*) of at the outset of that chapter (*KrV*, A65/B90).[25] Unlike traditional philosophic analyses of *a priori* given concepts, which merely bring their content to distinctness, Kant's analysis of our faculty undertakes to discover how its *a priori* given concepts are possible, by investigating their origin and birthplace (*KrV*, A65/B90). In the introduction to the First Division of the "Transcendental Logic" Kant stresses that the table of elementary concepts of the pure understanding, the categories, must be complete and exhaust the entire field of this faculty, as well as be a precise exhibition of its elementary concepts that separates these cleanly from those concepts derived from them (*KrV* A64/B89). For it is through the precise and exhaustive exhibition of these fundamental concepts that metaphysics, as "the science of the first principles of human cognition" (*KrV*, A843/B871), acquires that systematic unity "which first makes ordinary cognition into science" (*KrV*, A832/B860). Accordingly, Kant says:

> Now this completeness of a science cannot soundly be supposed from a rough calculation of an aggregate put together by experiments [*durch Versuche*]; hence it is possible only by means of an **idea of a whole** of the *a priori* cognition of the understanding, and through the determinate division [*bestimmte Abtheilung*] of concepts that such an idea makes out [*ausmachen*], consequently only through their **connection in a system**. (*KrV*, A64/B89)

Kant does not attempt to secure the completeness requisite for the successful exhibition of his categories, or for the system of principles that follows from it, from an analysis of these concepts, in accord with the method of traditional philosophy. Rather, he does this through the division of the concepts that are determinately situated within, and together constitute, an "**idea of a whole** of the *a priori* cognition of the understanding." In this way, it is through articulating the original connection of these concepts in the faculty of understanding, the faculty for judgment, that he will secure their complete and precise exhibition. And so it would seem, already at the outset of the Transcendental Analytic, he is announcing that something very much like strict definitions of his elementary concepts of the understanding will be given, if his analysis is successful.

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[25]While Kant tends to use *Analyse* mainly to speak of the analysis of concepts, he will use *Zergliederung* to mean both the analysis of a faculty and of a concept. In this way I think the situation is similar to that of *Grundsatz* and *Princip* (See footnote 21).

4.3 The analysis of the faculty for judging

Pausing to take stock, we've seen in §2 that since the originality of a definition ensures that the boundary conditions of a concept can be derived from no where else, the originality will also secure the precision and exhaustiveness of the exhibition. Furthermore, we've found a strategy by which Kant might be able to work from the first principle of our faculty for knowledge, in particular its active stem, the understanding, in order to secure such an original exhibition of its fundamental concepts. This exhibition will proceed by an anatomy of the faculty for judging that divides it into its pure concepts, the categories, which will stand in connection in a system.

When examining our example *circle*, we found that the possibility of its original exhibition had its seat in its schema. At the outset of the "Transcendental Analytic," however, Kant declares that besides completeness in the exhibition of its fundamental concepts, an adequate analysis of the understanding will also respect the self-sufficient nature of it, treating it as much as possible in isolation from sensibility. Accordingly, we should not look to the schemata of the categories for the source of the originality of their definitions, grounded as they are in our *a priori* intuition of time.

Rather, Kant looks to general logic, which is the science of the laws of the understanding considered in isolation from sensibility, for a clue as to how we might give an original exhibition of the categories, the pure concepts of the understanding.[26] This science abstracts away from the content of thoughts and their connections to objects and attends only to the act of thinking in them. From it Kant is able to derive a table of the functions of thinking in judgment, which will consist in the acts that together compose the generic act of thinking in any judgment (*KrV*, A70/B95).[27] What Kant then goes on to maintain is that "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 the understanding" (*KrV*, A79/B104-105). For this reason, he takes the table of the functions of thinking in judgment to be

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[26]After presenting his table of categories Kant distinguishes them as *ursprünglich stammbegriffe*—original root (or stem) concepts—from derived (*abgeleitete*) pure concepts of the understanding, which he calls predicables. In this way, the categories are a class of pure concepts of the understanding—those that are elementary. In the first instance, however, Kant has the categories in mind when speaking of these pure concepts, and I will follow this usage here.

[27]Kant explains what he means by functions as "the unity of the act of ordering different representations under a communal [*gemeinschaftlichen*] one" (*KrV*, A68/B93). We need not get bogged down in the intricacies of the relation between the unity of an act and an act.

a clue to the structure of the table of categories.[28]

Returning to our question of how the faculty for judging can be the principle of the table of categories, we are now in a position to see why the functions deployed merely in thinking are not enough to explain the possibility of judgment. In merely thinking we may combine our concepts in whatever way we please. But when we judge, we make a claim about how things are. Specifically, in experience we make a judgment that any knower presented with the same manifold of intuition should be in a position to make. On Kant's account it is the functions of synthesis of the categories uniting this manifold for every knower that ensures they too could make this judgment. And it is because these are at work in the constitution of objects of experience that it is possible for our judgments to be about how things are.[29] In this way, the categories, no less than the logical functions of thinking, will be elements in the faculty for judgment since it is their combination of the manifold of intuition that makes judgment, over and above mere thought, possible.

In particular, Kant explains that the categories "are concepts of an object in general, by means of which its intuition is regarded as **determined** with regard to one of the **logical functions** for judgments" (*KrV*, B128). In merely thinking, there is a certain freedom in how we order the concepts involved. Both 'all bodies are divisible' and 'something divisible is a body' are perfectly acceptable according to the laws of logic, and justified by our intuitions of bodies. If I bring the concept of body under the concept of substance, however, it is determined that its empirical intuition in experience, the immediate representation of a body, "must always be considered as subject, never as predicate" (*KrV*, B129). For, a substance is "something that can occur solely as subject (without being predicate of anything)" (*KrV*, A242/B300), and by determining the intuition of a body through it, I judge that all finite knowers should also judge this intuition to be of a substance, a persisting substrata of predication across changes in its accidents.

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[28]I will not dwell on the 'metaphysical deduction' of the categories from the functions of thinking in judgment, although to really see how the original, precise, and exhaustive exhibition of the categories is working this would have to be done. The issues here, however, are vast and many interpreters have dealt with these topics in greater detail than I could in this short essay. In what follows, I will only be briefly raising those points relevant to my case, and it goes without saying that even on these much more could, and has, been said.

[29]In other work I hope to develop a fuller account of these two aspects of the categories and their roles in making both cognitions and their objects possible.

4.4 Division and the community of the categories

I will be developing this account of the categories below by examining what the definitions of the categories I think Kant sketches look like. Before turning to this, there is a final element in his analysis of the faculty for judgment relevant to why he should think these definitions are possible. Although the marks uncovered in the common analysis of a concept do not stand in a special relation to one another that allows their boundaries to be determined, things are otherwise with the fundamental concepts that are originally and constitutively connected in an analyzed faculty.

The analysis of the understanding consists in its division. This is the key to understanding how the boundaries of its elementary concepts are determined. Normally what one divides is a concept. According to Kant, concepts stand in a Porphyrian tree: there are higher genus (e.g. life-form), and lower species (animal, plant, etc.) concepts. The sphere or extension of a genus concept is completely divided into the species concepts that are under it. Such species concepts, which are under a common genus and together exhaust its extension, stand in a community of concepts under their genus. The members of such a community are in different senses both independent of one another and interdependent on one another. They are independent in that none of them is superordinated to the others—none of them includes the content or intension (*Inhalt*) of any of the others in its content. They are, however, interdependent insofar as some individual or representation falling under one of them, cannot fall under any of its siblings. The spheres of such concepts 'reciprocally determine' each other in that the sphere of one of the siblings is the complement of the sum of the spheres of the other siblings under the common genus.[30]

When we divide the faculty of the understanding into its functions or actions, there is an analogous reciprocal determination among the fundamental concepts, except that this determination is not among their extensions, but their content or intension. This disanalogy, of course, radically transforms the nature of the reciprocal determination. Rather than their extensions together dividing the sphere of a higher concept, these categories will together constitute the *a priori* cognition

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[30]The predicate concepts of a disjunctive judgment stand in a conceptual community with one another under the subject concept (cf. *KrV*, A74/B99). Paradigmatic examples will be 'Every triangle is either right, acute, or obtuse', 'Every cat is either a calico, or a non-calico' or 'Every animal is either a mammal, a reptile, a fish, . . .'. In these cases all of the predicates, when taken together, will exhaust the sphere of the divided subject concept and if, e.g., some triangle is right then it is not acute.

of the faculty for judgment, are determined by the idea of this cognition, and are thereby connected together into a system of such cognition.

To get some idea of how this works, consider first the logical functions of thinking in judgment. Although I will not dwell on it, we can see why Kant might have thought that these form a systematic, exhaustive, exhibition of the moments in any act of thinking in judgment. For example, categorical judgments like "Every S is P" have a four part structure insofar as they are connected together with our other judgments: a subject concept, a predicate concept, a copulative relation between these, and a connection of this judgment to the rest of our knowledge. These four parts or moments in judging correspond to the four headings in the table of the functions of thinking in judgment. And in general, although these moments will be instantiated in different ways in different judgments, there is some plausibility to the thought that all judgments will involve these and only these acts of thinking in some way or other.

Now the categories, as "the rules of the pure thinking of an object" (*KrV*, A55/B80), are determinations of intuition with regard to the logical functions of thinking in judgment, and so also stand in a system. These form a system because without each of these ways of determinately thinking about intuition linking together as they do, it would not be possible to determinately think or judge about objects. Their boundaries reciprocally determine one another insofar as they each have their place within this system that makes judgments about an object possible, and these moments in judging about an object cannot be exchanged with one another.

Here is a very brief sketch. According to Kant, every knowable object is extensive, is real, can be considered as a substance, causally interacts with other substances, and contemporaneously stands in a community with other substances that together make up the whole of nature. Without objects being extensive magnitudes, without their having a duration or filling space, we would not have intuitions of them, and would not be able to situate them in space and time, which are themselves extensive magnitudes (cf. *KrV*, A162/B202). Without their being real, objects would not affect us and so could not be perceived (cf. *KrV*, A166/B207). Without a persisting object underlying these perceptions, or relating to one another successively and simultaneously, these perceptions would not stand in necessary connections, and their object would not be knowable as an object that interacts with and is situated in nature through them (cf. *KrV*, A176/B218). Finally, without relating this

object to our system of knowledge as possible, actual, or necessary we cannot determinately know it at all (cf. *KrV*, A219/B266). Although this was quick, in these headings we find a system of ways that objects might be, which correspond to possible judgments about them. On Kant's account it is through the categories that we recognize these kinds of features and make these kinds of judgments.

Returning to the way Kant maintains these are situated within the faculty for judgment, the understanding, both the categories and the mere functions of thinking in judgment are *a priori* elements in this faculty that are necessarily at work in every judgment about an object and, accordingly, both will have their place in an analysis of this faculty. Unlike the mere functions, however, the categories will count as cognition because of their essential connection to objects. Nonetheless, both will compose systems, and they will be parallel because of how the categories depend on the functions of thinking.

In each of these systems the way in which the elements reciprocally determine one another, as distinct, yet necessary activities in making judgments, is not as straightforward as when we divide a concept into its subordinate concepts. This should be unsurprising, however, because dividing a faculty is more difficult than partitioning a genus into species. It requires long and careful attention to the elements in an exercise of the faculty, distinguishing which of these are necessary or contingent, and articulating the structure of the necessary elements. Specifically, it requires seeing how the necessary actions in thinking differ from the necessary actions in thinking of objects and getting clear on how the elements within each of these overall actions fit together. The result of this examination is an understanding of these elements, as the actions or functions that together constitute the faculty, where the nature of each is revealed through its place in the overall generic act of the faculty. Accordingly, it is in this way that we should understand what Kant means by an analysis of the faculty of judgment and it is this way that such an analysis makes the precise, original boundary determinations of the categories possible.

5   Definitions of the Categories

In the "Phenomena and Noumena" chapter, at the end of the "Transcendental Analytic," after having surveyed the understanding and determined the place of each of its parts, Kant casts back

"yet another glance at the map of the land that we would now leave," in part by taking up the subject of the definitions of the categories (*KrV*, A235/B294-A236/B295). This is his fullest treatment of the topic and here I take him to be sketching both merely logical definitions of the pure categories, and real definitions of the schematized categories.

First, a textual note. The passages in this chapter on the definitions of the categories are among the most worked over across the two editions, and the main passage that seems to give the logical definitions of the pure categories is omitted in the B edition. It is tempting, then, to think that Kant removed these passages because he wanted to avoid taking on the commitments they entail. It is more plausible, however, that he thought they were particularly obscure, and that some of the work done in the deleted sections of A241-242 and A244-246 was unnecessary for the argument of the chapter. This is especially true with the paragraph at A244-246, which seems like a digression. Furthermore, he couldn't have been too shy about these commitments since he covers some of the same ground as A245-246 in the B edition's "**explanation of the categories**" at B128-129. More strongly, however, in other unaltered passages Kant seems to indicate what real definitions of the categories would look like, and to be in a position to give these one must also be able to give corresponding nominal definitions.

Kant treats the topic of merely logical definitions of the pure categories in the removed paragraph at A244-A246. There he gives an explanation similar to the one we examined at the end of §4.3, from B128. He says, the pure categories "are nothing other than the representations of things in general insofar as the manifold of their intuition must be thought through one or other of these logical functions [i.e. the logical functions of judgment in general]" (*KrV*, A245).[31] In this specification Kant is, however, focusing in on the logical component of the category and abstracting away from its sensible condition, since the pure category omits this, and contains "nothing but the logical function for bringing the manifold under a concept" (*KrV*, A245). Returning to the

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[31]Here and at B128 Kant is giving an explanation of the categories, which are concepts. Accordingly, these can seem like 'higher order' explanations, explanations about concepts rather than objects. I do not think Kant thinks about distinctions between 'orders' as we do, and he tends not to discuss concepts of concepts or judgments about concepts as such. Regardless, I do not think the general 'explanation' of the categories at B128 (or the one here) gives a strict (i.e. complete, precise, and original) definition of the categories, but only points the way towards them, by indicating how these concepts work. For, as we saw in the supposedly decisive passage, strict definitions must be adequate to their object (*KrV*, A728/B756), and in defining the categories what is at issue with their strict nominal or real definitions is the way in which an object is thinkable or cognizable through them. Accordingly, these definitions will indicate what is specific to each of them, and explanations of how they generally function will be inadequate.

case of substance, this means that we are considering only the way of determining the order in a manifold of intuition in general—that the intuition is of a substance that can only be thought of as subject, never as predicate, in a judgment—without specifying that this manifold is spatio-temporal. Accordingly, it means that we are abstracting away from the way in which the manifold of intuition will determinately represent the object as a permanent substrata across changes in its state. For, permanence is a temporal quality, and changes only happen in time. And so, considered merely as a pure category, substance is only "that which, in relation to intuition, must be the ultimate subject of all other determinations" (*KrV*, A246). And to consider the pure category is to consider merely the way the functions of thinking in judgment will determine any manifold of intuition in general that is thought through the category, be it spatio-temporal or not, abstracting away from the specific nature of the intuition in question.

A little later, Kant fills out his description of a pure category by saying that in it "no object is determined, rather only the thought of an object in general is expressed in accordance with different *modi*" (*KrV*, A247/B304). I take this to suggest that we might think of 'thought of an object in general,' or 'the determinate thinking of the manifold of intuition of things in general' (now abstracting away from the sensible condition) to be the genus of the nominal definitions of the pure categories, and their differentia to be the logical functions of thinking in judgment, which are the different *modi*.

This suggestion is supported by what I take to be examples:

> Magnitude [*Größe*] is the determination that must be thought only through a judgment that has quantity [*Quantität*] (*judicium commune* [i.e. is plural or universal]); reality, that which, can be thought only through an affirmative judgment; substance, that which, in relation to the intuition, must be the ultimate subject of all other determinations.[32] (*KrV*, A245-246)

In each of these cases we have a bare logical specification of a kind of feature of an object, through the kind of judgment that can be used to think of this kind of feature. When we make these

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[32]More examples are buried in his discussion of the real definitions of the categories on the preceding pages: leaving persistence out of substance we have "the logical representation of the subject, which I try to realize by representing to myself something that can occur solely as subject (without being a predicate of anything)," in the pure category of cause we will only find "that it is something that allows an inference to the existence of something else," and the pure concept of community will only contain the thought of "reciprocal causality in the relation of substances to each other" (*KrV*, A242-243/B300-301).

judgments we determine the object, insofar as we think of it as being one way rather than another. We do this by representing the manifold of its intuition as determinately united together and as related to the object. Insofar as the category indicates this unity among the manifold of intuition that must be thought in accord with one or the other of the functions of thinking in judgment, the category is what makes the representation of this unity possible. And the way in which the category represents the object, through this representation of the unity of the manifold of intuition, is that it represents the manifold of intuition not merely as united this way for me, the one who is judging, but for everyone. That is, through the category, I represent the manifold not only as combined that way for me in my mind, but as though it would be combined in that way for everyone to whom it was available. And because through the category I represent that this same unity of the manifold would be present for every possible knower who comes into contact with this manifold, I attribute this unifying element among the manifold to the object.

Returning to our examples, in determining the manifold of intuition through substance, I represent that in it which must be the ultimate subject of other predications or determinations. This will be the object in which these predications inhere for everyone, and so will be the ultimate subject of predication not just for me, but for everyone. In determining the manifold through the category of reality, we represent a feature of the object that must be represented through an affirmative judgment. This will concern a way the object is, a positive determination, and will be a judgment that anyone similarly affected by the object can make. In determining the manifold through the category of quantity, we represent a feature of the object that must be represented through a general judgment (cf. *KrV*, A71/B96), and so will concern the magnitude of the intuition unified.

Now, admittedly, Kant does not announce the explanations of the pure categories I quoted above as nominal definitions. Nonetheless, I think these explanations fit the bill. For, each specifies a general mode (or way) in which we can think of an object, determining its manifold of intuition. These modes correspond to the logical functions of thinking in judgment, since they are different ways of thinking of an object in general. Still, they are merely nominal, because they leave entirely open how the manifold of intuition is given, and so tell us nothing about how to apply the concepts they define.

The main text that speaks in favor of maintaining that Kant thought real definitions of the schematized categories were possible is an unaltered passage where he gives examples of quantity and reality:

> No one can define [i.e. give a real definition of] the concept of magnitude in general except by something like this: That it is the determination of a thing through which it can be thought how many units are posited in it. Only this how-many-times is grounded on successive repetition, thus on time and the synthesis (of the homogeneous) in it. Reality, in contrast to negation, can be defined only if one thinks of a time (as the sum total of all being) that is either filled by it or empty.[33] (*KrV* A242/B300)

The difference between these and the nominal definitions of the pure categories is that they secure their application to empirical, i.e. spatio-temporal, objects of experience, through their reliance on their temporal schemata. Accordingly, these are the same concepts of an object in general, but now with a rule for how they can be applied to possible objects of experience, which is a rule for how an object can actually be determined through them. In this way, I think the genus of the real definitions of the categories will be the same as that of the nominal definitions I sketched, but the differentia will have a further specification. This specification is that they now include **how** the manifold in intuition in general is to be thought determinately through a concept.

If we bring this together with the preceding, we might, for example, think of the proper real definition of magnitude as: 'magnitude is the determination that must be thought only through a judgment that has quantity, where this states how many units are posited in that which is determined.'[34] Since this how-many-times is grounded on successive repetition, it will be grounded on time, and include the schema for quantity, which specifies how we can make these judgments. In this case the genus is still the determinate combination of the manifold through the concept of an object in general, but the differentia specifies not only that the determination must be thought

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[33]For the rest—substance, cause, community, possibility, existence and modality—Kant doesn't sketch a real definition of the schematized versions in making his argument, although it seems clear that he thinks he could. Instead, he contents himself with making the case that (at least for substance and cause) without their schemata, not only would we lack all knowledge of the conditions under which the pure category can be attributed to any sort of thing, but also that no consequences can be inferred from it, since we cannot know whether we can determine any object through it. At another place, in his elucidation of the postulates, he does claim that these postulates offer definitions or explanations (*Erklärungen*) of possibility, actuality, and necessity (*KrV*, A219/B266). Although I think these plausibly are proper real definitions, I do not take this passage to be decisive.

[34]For other examples, I think we would need to stray farther from the text in bringing together what I take to be Kant's logical definitions at A246 and the real specifications that came before at A242/B300. For this reason, I will leave considering what these might look like to the reader.

through a judgment that has quantity, but also how that determinate combination takes place.

We can perhaps see how this definition would work concretely by examining the way Kant thinks quantity, in particular plurality in particular plurality or magnitude (*Prol.*, 4:303), determines a manifold of intuition in a given case. In the *Prolegomena* Kant says,

> The principle: a straight line is the shortest between two points, presupposes that the line has been subsumed under the concept of magnitude [*größe*], which is surely no mere intuition, but has its seat solely in the understanding and serves to determine the intuition (of the line) with respect to such judgments as may be passed on it as regards the quantity of these judgments, namely plurality [*Vielheit*] (as *judicia plurativa*), since through such judgments it is understood that in a given intuition a homogeneous plurality is contained. (*Prol.*, 4:301-302)

Asserting, 'a straight line is the shortest between two points' requires having considered the possible lines that could connect any two points and having recognized that in all cases the shortest must be straight. Here, although we need not have explicitly formulated what the units are, by claiming that a straight line is the shortest, we think of the possible pairs of points, compare the possible lines connecting each pair, and claim that no matter the unit, there will be fewer in the straight line connecting the points, than in any other possible line. Of course, this is a sophisticated process with many components. For our purposes, what is significant is that in thinking of the straight lines as *shorter*, we think of them as having a magnitude (a *Größe*), which Kant takes to involve a plurality (*Vielheit*), and whatever the unit measure, there will be fewer of these in this shortest line, than in the others. So for the principle 'a straight line is the shortest between two points,' when we consider the intuitions on which the judgment is grounded, the relevant determination of these is through the category of magnitude. This is because it is through this category that we can think about how many units would be contained in each line, determine the difference between these relative lengths, and so figure out which line is the shortest. In this way, in seeing how the category of magnitude determines the manifold of intuition on which this principle rests, we can see that it determines this manifold in accord with the logical function of quantity, where the quantity in question is determined by how many units are posited in the intuition.

Finally, before leaving this section, because the real definitions of the categories specify a way of applying them through their schemata, I think these definitions also express the real essence

of an object of possible experience in general, insofar as it is thought through the understanding. To spell out why this is in detail would be a large task. For, part of Kant's Copernican Turn is that the categories are representations that make the objects cognized through them possible (cf. *KrV*, Bxvii). Specifically, how this works comes out through the way Kant understands the nature of objects, especially objects of experience. An object "is that in the concept of which the manifold of a given intuition is **united**" (*KrV*, B137). And the categories are the concepts of an object in general that make such unification possible. In this way, they express the real essence of an object of possible experience in general, which is a partial explanation of the nature of appearances. To really understand how this works, however, we would need to explicate the inner workings of the "Transcendental Deduction of the Categories" and delve deeper into Kant's Transcendental Idealism than we can here.

6   An Objection

There are many open questions about the nature of these definitions, but I take the preceding to have sufficiently shown that Kant thinks definitions of the categories are possible. In this final section, I'd like to address an objection that will clarify the exact nature of the reality secured for the definitions of the schematized categories.

The objection is that merely schematizing the categories does not guarantee that their definitions are real. In sensation things are represented immediately as real (cf. *KrV*, B147). But the schematization of the categories does not guarantee that there will be any sensation, any given real appearance, in which they are operative. So their schematization alone is insufficient for securing their reality; for this sensation is also needed.

This line of objection seems to find support in the "General Note on the System of Principles." There Kant says that "we can not have insight into the possibility of any thing in accordance with the mere categories, but we must always have available an intuition in order for it to display the objective reality of the pure concept of the understanding" (*KrV*, B288). Furthermore, to establish the objective reality of the categories "we do not need merely intuitions, but always outer intuitions" (*KrV*, B291), and not only these, but even the motion of a point in space is required

(*KrV*, B292). Motion and matter as the movable in space, however, are empirical concepts (*MAN*, 4:470; 4:472; 4:480-4:482), derived from moving spatial objects. Thus, at least some experience of such objects is required for securing the reality of the schematized categories and experience always involves sensation.

There are a few distinct issues wrapped up in this objection that need to be separated. The first is whether the temporally schematized categories require spatial exhibition for their reality. The second is whether this exhibition must be through motion. The third is whether motion in this sense is empirical. The fourth is whether sensation is required for this exhibition, or whether the intuition in question can be *a priori*.

On the first, Kant is unambiguous that the categories, and thus their definitions, require spatial exhibition for their reality (*KrV*, B293). In "The General Note" Kant pays particular attention to the categories under the heading of relation, arguing that outer intuition is required to show the objective reality of the concept of substance, as well as cause and community which depend on it. This is because "space alone persistently determines, while time, however, and thus everything that is in inner sense, constantly flows" (*KrV*, B291), and so for the exhibition of these concepts we need an intuition **in space** (of matter). At the end of the 'Note' Kant briefly addresses the mathematical categories, claiming that "it can just as easily be established that the possibility of things as **magnitudes**, and thus the objective reality of the category of magnitude, can also be exhibited only in outer intuition, and that by means of that alone can it subsequently be applied to inner sense" (*KrV*, B293). Presumably, this is because extensive magnitudes must at least be drawn *a priori* order to be cognized, and in this way presuppose space in their exhibition. I take this remark to encompass *reality* as well because the real in appearances, sensation, has an intensive magnitude, which is cognized objectively through *reality* by uniformly reducing the intensity of the sensation to zero and then bringing it back up, thereby exhibiting it extensively and allowing the measurement of its degree (cf. *KrV*, A166/B207*ff.*; A143/B182).

Regarding motion, I think there is also a case to be made that it must be involved in securing the reality of the categories. With respect to it, however, Kant only explicitly discusses the concept of causality. To exhibit alteration, as the intuition corresponding to causality, he thinks we must take motion as our example. Specifically, he thinks that alteration, as "the combination of

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contradictorily opposed determinations in the existence of one and the same thing" (*KrV*, B291), is incomprehensible without an example, an intuition. This intuition, perhaps surprisingly, "is the motion of a point in space" (*KrV*, B292), and cannot be merely an alteration in inner sense. It is Kant's reasoning for this that makes me think there is a case to be made that motion must be involved in exhibiting the reality of the other categories as well:

> in order to subsequently make even inner alterations thinkable, we must be able to grasp time, as the form of inner sense, figuratively through a line, and grasp the inner alteration through the drawing of this line (motion), and thus grasp the successive existence of ourself in different states through outer intuition. (*KrV*, B292)

The nascent case here is that because all of the schemata of the categories are temporal, this reasoning generalizes: because we must represent time figuratively, the way that we bring any of the categories to an example will itself involve drawing a line, and thus motion.

Even if it turns out motion is required for the exhibition of any of the categories, regarding the third issue, I do not think the motion in question has to be empirical, but can be *a priori*, at least as long as the nature of its object is left undetermined as to whether it is corporeal or thinking matter, as it is in the *First Critique*. The key passage for assessing this aspect of the objection is the footnote at B155:

> Motion of an **object** in space does not belong in a pure science, thus also not in geometry; for that something is movable cannot be cognized *a priori* but only through experience. But motion, as **description** of a space, is a pure act of the successive synthesis of the manifold in outer intuition in general through productive imagination, and belongs not only to geometry but even transcendental philosophy.

The question is whether the motion that may be required for the exhibition of the schematized categories is that of an object or of the description of a space. The kind of motion required is that of a point through space (cf. *KrV*, B154; B292). This motion describes a line. A point is the boundary of a line, and a line is a space (as well as the boundary of a space) (*Prol.*, 4:354). This does not, however, make the point an object. Insofar as a point is an 'object,' it is a mathematical one, a locus in space, but not an object of experience. Thus, this motion is not of this or that body, but describes the space of a line *a priori*, and is foundational to geometry, and even transcendental philosophy, insofar as it is required for the figurative exhibition of time itself, but need not be

empirical.

Although the motion in space required for the potential exhibition of the categories merely describes space, and so is *a priori*, it isn't entirely clear that this is sufficient for showing the reality of the categories. For while this exhibits the function of the power of judgment, whereby an object is subsumed under a category, the category acquires its "object, thus its objective validity, only through an empirical intuition," which is the "*data* for possible experience" (*KrV*, A239/B298). Nonetheless, I think that in whatever sense in which we can have real definitions of mathematical concepts without needing experience, in an analogous sense we can have real definitions of the categories without it.

This is because although it can seem as though mathematics is independent of experience in a stronger sense than the categories, it is not. The two depend on experience in similar ways. Although the concepts of mathematics, its principles, and its objects, "are generated in the mind completely *a priori*, they would still not signify anything at all if we could not always exhibit their significance in appearances (empirical objects)" (*KrV*, A240/B299). Kant does go on to claim that mathematics makes its abstract concepts sensible, i.e. display their objects in intuition, "by means of the construction of the figure, which is an appearance present to the senses (even though brought about *a priori*)" (*KrV*, A240/B299), which is something that philosophy cannot do. Nonetheless, for the concepts of both, the "*use* and relation to supposed objects can in the end be sought nowhere but in experience, the possibility of which (as far as its form is concerned) is contained in them *a priori*" (*KrV*, A240/B299). In this way, although the concepts of mathematics can be made sensible *a priori* while the categories cannot, as far as their dependence on experience for their potential reality, the concepts of mathematics and the categories are on a par.

Specifically, as concepts of the form of appearances, both kinds of concepts depend on experience for their significance, since for their reality both must contain "a clear **mark** by means of which the **object** (*definitum*) can always be securely cognized" (*KrV*, A241n). This mark, however, need not guarantee the existence of the object; for all it contains, the object may be merely possible. Does the reality of a definition then depend on a potentially contingent fact, external to the explanation? I doubt this. The definitions of mathematics and the categories would indicate the real essence of appearances, not as regards their matter, but their form, even if there were no existing empirical

things. This is not to deny that both would not be possible without the fact of experience. On the contrary, if there were no sensation to enliven our faculties, and if the resulting activity were not ordered into objective thought, then we would not have cognition or experience at all, let alone be able to formulate definitions of concepts that are forms of possible experience.

7 Conclusion

With his Copernican Turn, Kant is able to trace the pure forms of empirical objects back to their original sources in our faculties for knowledge. Specifically, with his analysis of the understanding, he traces the pure concepts of this faculty, the categories, back to their origin through the functions of thinking in judgment and thereby makes possible an original, thus complete and precise, but merely logical exhibition of these concepts. These merely logical definitions acquire their reality, and thus securely cognize their objects, only through their application to objects of experience through their schemata and the conditions of our sensibility, since this is the only kind of intuition by which we can be given objects for knowledge. In this way real definitions of the categories were possible on Kant's account.

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