Kant's Critical Project

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In this week's notes I give an overview of some of the central features of Immanual Kant's "Critical" philosophy. I'll try to sketch answers to some basic questions about Kant and his "Critical" philosophy.

Table of Contents

1. Who is Kant?

Immanuel Kant (http://plato.stanford.edu/entries/kant/) (1724–1804) was the most significant German philosopher of the eighteenth century, and was a key figure in the Enlightenment (http://plato.stanford.edu/entries/kant/). He wrote nearly all of his most famous philosophical works relatively late in his professional life, having only achieved a permanent position as professor in 1770, at the age of forty-six. From 1781 to 1798 Kant published a series of tremendously influential philosophical works, including the *Critique of Pure Reason* (1781/7), the *Groundwork of the Metaphysics of Morals* (1785), the *Metaphysical Foundations of Natural Science* (1786), the *Critique of Practical Reason* (1788), and the *Critique of the Power of Judgment* (1790). His "Critical" philosophy is considered to consist of the system articulated by the three *Critiques* and the related shorter works in the period from 1781-1790. This system, or at least various aspects of it, would exert a dominating influence on the structure of nearly all philosophical inquiry in Europe and the United States until at least the mid-twentieth century.

2. What is the "Critical" philosophy (in brief)?

Kant, like Descartes, Locke, and Hume, wishes to articulate the nature and extent of human knowledge, and to do so in a manner which proceeds from an analysis of the nature of human cognitive capacities. Kant believes that human reason requires a 'critique' or examination as to whether it is fit to provide us with knowledge. Kant ultimately argues that human reason is not fit to provide us with knowledge of a mind-independent reality transcending human experience. In this sense Kant is deeply sympathetic with 'empiricist' critiques by Locke, Berkeley, and Hume of the metaphysical inquiries of more 'rationalist' philosophers such as Descartes, Spinoza, and Leibniz.

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However, Kant also argues that we have much deeper and more extensive knowledge of the world we experience (or could possibly experience) than his empiricist predecessors would allow. For example, Kant argues that we have knowledge of necessary truths concerning aspects of the empirical world (such as that every event—i.e. every change of a substance's properties—has a cause), as well as truths which are universal in extent. Thus Kant articulates a view that is directly opposed to the kinds of skeptical arguments Hume discusses in his *Treatise* and first *Enquiry*.

Kant thus thinks that we have knowledge of the empirical world governed by necessary and universal laws, while he nevertheless argues that we are almost wholly ignorant of the fundamental reality which underlies or grounds the existence of the empirical world. In this way Kant combines various aspects of positions from both the British and continental philosophers. Like Locke and Hume, Kant thinks we must realize that the boundaries of human knowledge stop at experience, and thus that we must be extraordinarily circumspect concerning any claim made about what reality is like independent of any possible experience. But, like Descartes and Leibniz, Kant thinks that central parts of human knowledge nevertheless exhibit characteristics of necessity and universality, and that, contrary to Hume's skeptical arguments, we can have good reason to think that they do.

Kant's contention is that genuinely "scientific" knowledge is knowledge of propositions that exhibit universality and necessity with respect to objects of experience. Such knowledge relies on "cognition" of what Kant calls "synthetic a priori" judgments. Kant argues that the explanation of such judgments and how we could come to have cognition and knowledge of them requires an analysis of our own mental faculties, most particularly, the faculty of reason itself. This "critique" of reason will lead to a "discipline" of reason's reach – of what can be adequately reasoned about, or "comprehended". As Kant puts it,

> [T]hat reason, which is properly obliged to prescribe its discipline for all other endeavours, should have need of one itself, may certainly seem strange, and in fact reason has previously escaped such a humiliation only because, given the pomp and the serious mien with which it appears, no one could easily come to suspect it of frivolously playing with fancies instead of concepts[,] and words instead of things. (A710/B738; see also A738/B766)

Kant thus critiques reason in order to show its nature and limits, and thereby curb or "discipline" the pretensions of various metaphysical systems articulated on the basis of a firm confidence that reason alone allows us to scrutinize the very depths of reality. But Kant also argues that the legitimate domain of reason is more extensive and more substantive than empiricist critiques have allowed. In this way Kant salvages much of the prevailing Enlightenment conception of reason as an organ for knowledge of the world.

3. What are the aims of the Critical Philosophy?

Kant's aims with the Critical philosophy are relatively easy to state, but require a fair bit of unpacking/explanation. They are:

A. To set metaphysics on the "secure path of a science" (Bix-x)
B. To explain how propositions making claims of universality and necessity about the empirical world (e.g. Necessarily, all events have a cause), what Kant calls "synthetic a priori cognitions" could be both true and known to be such
C. To articulate the limits of rational inquiry and explanation
D. To explain why metaphysics (and inquiry in general) tends to overstep these limits
E. To articulate rational bases for faith (though not necessarily knowledge) in an immortal soul, God, the kind of freedom required for moral responsibility, and other "ideas of reason"

Let's look more closely at each of (A)-(E) in turn.

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A. Metaphysics & the secure path of science

Understanding what Kant intends by his aim of setting metaphysics on the "secure path of a science" (Bix-x), we need to understand what he means by "science" and what he means by "metaphysics".

I. What is a science?

Kant's conception of what he calls "science properly so called" (or just "proper science" for short) (Bix; MFNS 4:468) is very different from the notion of a science as it is currently used today. For Kant, a "proper science" has three features: it is (i) a systematically ordered whole; (ii) each fact (and proposition expressing that fact) in the science is necessarily related to others through the ground-consequent relation (the logical correlate of which is the "if-then" relation); (iii) the truths of the science are known to hold necessarily, given their grounds. Let me say a bit more about each of these conditions.

A proper science is a "systematic whole" in the sense that it is delineated from other areas of inquiry by some principle or set of principles, such that it is knowable whether some proposition does or doesn't belong to the science (so, e.g., there would always be an in-principle answer to some question like "is this proposition part of math or part of physics? or part of biology or part of chemistry?").

A proper science is ordered by ground-consequent relations in the sense that, given the "ground", the consequent necessarily follows. The notion of a ground-consequent relation is supposed to pick out *both* a real metaphysical relation of necessary dependence, and an intelligible relation of logical consequence (such as with the material conditional "if-then").

Finally, since the consequent follows from its ground with necessity, the truths of a proper science are such as to be *necessarily* true (at least given the grounds).

This conception of science should seem very restrictive compared to our current conception of science as an empirical enterprise concerning contingent truths.[1] But our contemporary notion of scientific knowledge, and "scientists" as the people who practice science, only came into existence in the 19th century (https://en.wikipedia.org/wiki/Scientist#Historical%5Fdevelopment%5Fand%5Fetymology%5Fof%5Fthe%5Fterm). Before then, and going back to Aristotle's natural philosophy (http://plato.stanford.edu/entries/aristotle-natphil/), the dominant conception of theoretical knowledge, known in Latin as '*Scientia*' (Greek:'*Epistêmê*'), concerned *any* body of knowledge organized according to some principle or set of principles that exemplify the explanatory relations of what is best known and explanatorily basic as the basis of what is least known and explanatorily derivative (see also (Jardine 1988; Randall 1961; De Jong and Betti 2010)). A 'science' was thus distinguished from a mere aggregate of known facts in virtue of the presence of such explanatory connections between facts.

For example, when asked why trees lose their leaves in the fall, one might reply, "because the wind blows them off." One might even label trees which feature this characteristic as 'deciduous' (http://en.wikipedia.org/wiki/Deciduous). Neither the label, in and of itself, nor the description would be a particularity deep or fruitful form of explanation. A better one would be one that articulated *why* there is this connection between season and plant behavior. For example, a better explanation might say that diminished sunlight in the autumn inhibits the production of chlorophyll, which is required for photosynthesis, and without photosynthesis trees go dormant and shed their leaves. Now the "deciduous" label has a more explanatory role. We can deduce, from the fact that a tree is deciduous, that it has certain characteristics, and that these characteristics play an important explanatory role in understanding the tree's behavior. Not only that, but the explanation is also importantly *asymmetrical* in nature. A tree is deciduous in virtue of its failure to produce chlorophyll at particular times, and in turn, this lack of chlorophyll production explains why the tree fails to photosynthesize, rather than the other way around.

Aristotle puts the notion of scientific explanation—knowledge why rather than mere knowledge that—this way:

> We suppose ourselves to possess unqualified scientific knowledge of a thing, as opposed to knowing it in the accidental way in which the sophist knows, when we think that we know the cause on which the fact depends, as the cause of that fact and of no other, and, further, that the fact could not be other than it is….The proper object of unqualified scientific knowledge is something which cannot be other than it is. (Aristotle, *Posterior Analytics*, I.2)

Note that Aristotle believed that scientific explanation not only captures asymmetrical explanatory relations but also ones which are, in some sense, *necessary*. One way in which this explanatory relationship might be modeled is via syllogism (http://plato.stanford.edu/entries/aristotle-logic/). A syllogism is an argument in which a judgment—the "conclusion"—logically follows from some other set of judgments—the "premises" or "assumptions". In Aristotle's logic (and in the logic used from the Medieval and into the Early Modern era) the premises were typically understood to be judgments of what was already known. So a conclusion C follows from some premises A and B, if and only if it is impossible for C to be false while A and B are true (and known). Hence, Aristotle takes proper scientific explanation to be structured in the manner of a logical derivation, where, from basic knowledge, one derives other knowledge via logical argument. As Chris Shields puts it, (http://plato.stanford.edu/entries/aristotle/#Sci)

> the currency of science is demonstration ([from the Greek] "*apodeixis*"), where a demonstration is a deduction with premises revealing the causal structures of the world, set forth so as to capture what is necessary and to reveal what is better known and more intelligible by nature (APo 71b33–72a5, Phys. 184a16–23, EN 1095b2–4).

Hence, the structure of scientific knowledge is *demonstrative* and its demonstrations exhibit asymmetric explanatory relations between the things known. The demonstrative structure of scientific knowledge raises the problem of how such demonstrations get started.

We can see then that Kant's conception of a proper science is deeply Aristotelian, at least in the sense that it shares with Aristotle a view of such science as articulating systematic explanatory connections between truths that are known to hold with necessity.

II. What is metaphysics?

Concerning what "metaphysics" means for Kant, it is again helpful to bear in mind the Aristotelian background. "Metaphysics" as a subject matter, traditionally designates that set of writings (lecture notes) of Aristotle that came after his physics. Here's a useful summary of the history of the word:

> The word 'metaphysics' is derived from a collective title of the fourteen books by Aristotle that we currently think of as making up Aristotle's *Metaphysics*. Aristotle himself did not know the word. (He had four names for the branch of philosophy that is the subject-matter of Metaphysics: 'first philosophy', 'first science', 'wisdom', and 'theology'.) At least one hundred years after Aristotle's death, an editor of his works (in all probability, Andronicus of Rhodes) titled those fourteen books "*Ta meta ta phusika*"—"the after the physicals" or "the ones after the physical ones"—the "physical ones" being the books contained in what we now call Aristotle's *Physics*. The title was probably meant to warn students of Aristotle's philosophy that they should attempt Metaphysics only after they had mastered "the physical ones", the books about nature or the natural world—that is to say, about change, for change is the defining feature of the natural world. (Inwagen and Sullivan 2020)

In Kant's time, while metaphysics is still considered "first philosophy", it has a more well-defined scope. Kant makes a distinction, which would have been very familiar to his contemporary readers in Germany, between *general* metaphysics and *special* metaphysics. General metaphysics, sometimes called "ontology", is the science of all *possible* beings; ontology studies the properties shared by all possible beings as such. *Special* metaphysics, by contrast, is the science of particular kinds of beings, and divides into three specific sub-disciplines: psychology (metaphysics of souls), cosmology (metaphysics of the universe), and theology (metaphysics of God). Hence, though "metaphysics" often is used to pick out the study of possible beings, it is also typically used by Kant in its more restrictive sense of concern with three particular (kinds of) beings—viz. the soul, the cosmos, and God.

Though Kant often begins his lectures on metaphysics in the traditional manner, by marking the distinction between general and special metaphysics, he also makes a pointed criticism of general metaphysics (or "ontology"). Traditional ontology was thought to begin from a distinction between the possible and the impossible. But Kant remarks (in student records of his lectures) that,

> [. . .] if two concepts are opposed—here [i.e. in Baumgarten's *Metaphysica*], for example, possible and impossible—then they always stand under a higher concept, for opposition always presupposes a disjunctive proposition. Now there must be a divided concept that has the opposing concepts as members of the division, and this is a higher concept. *Object* [. . .] is surely the highest concept in ontology. The possible we call 'thing' [*Ding*], 'something' [*Etwas*], and opposed to it is the impossible, nothing [*Nichts*]. (*Metaphysik Mrongovius* 29:8113)

This remark is mirrored by a short passage in the *Critique of Pure Reason*:

> The highest concept with which one is accustomed to begin a transcendental philosophy is generally the division into the possible and the impossible. Since all division, however, presupposes a concept that is divided, a yet higher concept must be given, and this is the concept of an object in general [*Gegenstand überhaupt*] (taken problematically, and unspecified whether it is something or nothing). (A290/B346)

Kant thus departs from his German contemporaries in construing General Metaphysics—which he here calls "transcendental philosophy"—as beginning from the study of the concept of an *object* as such rather than with the modal concepts of *possible*, *actual*, and *necessary* objects.[2] This departure is also the basis of a further break from the German tradition. Kant considers the question with which a properly "critical" or reflective metaphysics should be concerned is not "what is it to be possible or impossible?", but rather "what is it to be an object?", where the concept `<object>` is really that of `<object-represented-by-an-intellect>`. Thus, Kant's conception of General metaphysics or ontology is that of the study of the relation between the intellect or "understanding" (*Verstand*) and what is understood (object; *Objekt*; *Gegenstand*). As Kant puts it in a passage later in the *Critique of Pure Reason*:

> the proud name of an ontology, which presumes to offer synthetic a priori cognitions of things in general in a systematic doctrine (e.g., the principle of causality), must give way to the modest one of a mere analytic of the pure understanding. (A247/B303)

I'll say more about the notion of "synthetic a priori cognition" in the next section. For our purposes the crucial point being made by Kant here is that ontology, or General metaphysics, is, on his view, not to be construed as a study of the nature of things (or being) in general but rather the study of *objects*, insofar as they are represented

by the understanding or intellect. Put another way, Kant's contention here is that ontology must "give way" (or be revised) to a study of the intelligibility relation that exists between the understanding and what is understood.

Thus explicit turn to an interrogation of the nature of the intelligibility relation itself marks a departure from traditional metaphysics, but it retains important core aspects, it is not simply giving up on metaphysics and replacing it with epistemology.[3] Rather, Kant is making explicit an assumption about intelligibility that he thinks is present in all prior metaphysical inquiry and asking about its nature and conditions. Thus, while it is right to think of Kant as taking a kind of "epistemic turn" with regard to metaphysics, it is a turn that retains metaphysics within epistemic/cognitive considerations, rather than replacing it entirely.

B. What is synthetic a priori cognition & what is its import for metaphysics?

Above we saw that Kant aims to replace ontology with an "analytic of the pure understanding". We also saw him mention that ontology (or General metaphysics) is traditionally concerned with "synthetic a priori cognition of things". What do these two claims mean and how are they related?

I'm going to start with the second claim, about synthetic a priori cognition. We'll then turn to the issue of an "analytic of the understanding".

I. Synthetic a priori cognition

Understanding what Kant means in speaking of "synthetic a priori cognition", we need to understand three different sets of distinctions. These are: representation vs. cognition vs. knowledge, a priori vs a posteriori, and synthetic vs analytic. Let's take each of these in turn.

I.i Representation, Cognition, & Knowledge

Let's start with representation. At the most basic explanatory level, Kant conceives of the (discursive and finite) mind as constituted by two fundamental capacities (*Fähigkeiten*), or powers, which he labels "receptivity" (*Receptivität*) and "spontaneity" (*Spontaneität*). Receptivity, as the name suggests, constitutes the mind's capacity to be affected, whether by itself (i.e., one "part" or capacity of the mind affecting another) or something else (e.g., something distinct from the mind). For Kant, any exercise of the mind's receptive power essentially requires some prompting in order to engage in the production of representations. In contrast, the power of spontaneity needs no such prompting. It is able to initiate its activity from itself, without any external influence.

Kant thus construes all mental activity either in terms of its resulting from affection (receptivity) or from the mind's self-prompted activity (spontaneity). From these two very general aspects of the mind Kant then derives three basic cognitive faculties (*Vermögen*), termed by Kant "sensibility" (*Sinnlichkeit*), "understanding" (*Verstand*), and "reason" (*Vernunft*). These faculties characterize specific cognitive powers, none of which is reducible to any of the others, and to each of which is assigned a particular cognitive task and a specific kind of characteristic representational output. In the case of sensibility the characteristic representations are sensation (*Empfindung*) and intuition (*Anschauung*). In the case of the understanding and reason (or the 'intellect' more broadly), concepts (*Begriffe*), judgment (*Urteil*), and inference (*Schluß*). For the most part, we can just lump conception, judgment, and inference together as intellectual or conceptual representation broadly construed.

In contrast intuition, in finite beings, is always sensible representation. Kant characterizes intuition in terms of two basic characteristics—viz. immediacy (*Unmittelbarkeit*) and particularity (*Einzelheit*) (cf. A19/B33, A68/B93; JL 9:91). This is in contrast to the mediacy and generality (*Allgemeinheit*) characteristic of conceptual representation (A68/B93; JL 9:91). Kant's distinction between these two sorts of representation might at first pass be taken as a kind of phenomenological distinction between how things seem to a perceiving subject independently of thought about what is so experienced, and this is indeed how at least some interpreters have construed Kant (e.g., (Prichard 1909; Russell 1913; Broad 1978; Parsons 1992)). However, as others have

noted (e.g., (Paton 1936, 98)), Kant's method for distinguishing the various contributions made by our cognitive faculties proceeds not by appeal to phenomenology but rather philosophical abstraction (e.g., A20-1/B34-5). Moreover, Kant at least sometimes seems to deny that a representation (or its content) could be present to consciousness at all—i.e., be something "for" the subject, without conceptualization (e.g., A116-17, B132). Hence Kant seems concerned not so much with the phenomenology of experience as he is with the role sense experience plays in facilitating cognition and knowledge.

Let's turn to cognition. In discursive rational beings such as ourselves, intuition and concept cooperate in the generation of what Kant calls "cognition". Kant employs the term "cognition" (*Erkenntnis*) in different ways.[4] In the 'Stepladder' passage from the first Critique Kant provides a very general definition of cognition as a conscious representation of an object:

> We are not so lacking in terms properly suited to each species of representation that we have need for one to encroach on the property of another. Here is their progression: The genus is **representation** in general (*repraesentatio*). Under it stands the representation with consciousness (*perceptio*). A **perception** that refers to the subject as a modification of its state is a **sensation** (*sensatio*); an objective perception is a **cognition** (*cognitio*). The latter is either an **intuition** or a **concept** (*intuitus vel conceptus*). The former is immediately related to the object and is singular; the latter is mediate, by means of a mark, which can be common to several things. A concept is either an **empirical** or a **pure concept**, and the pure concept, insofar as it has its origin solely in the understanding (not in a pure image of sensibility), is called *notio*. A concept made up of notions, which goes beyond the possibility of experience, is an **idea** or a concept of reason. (A320/B3767; see also JL 9:91).

In the sense at issue here both intuitions and concepts may be "cognitions". Kant also has a narrower sense of cognition "in the proper sense" (A78/B103), which in finite discursive beings like us concerns only those states that are the outcome of a synthesis of concepts and an intuited manifold. Proper cognition satisfies three conditions: (i) consciousness; (ii) "agreement" (*Übereinstimmung*) or truth-aptness; (iii) real possibility. The consciousness condition is clearly stated in Kant's "Stepladder" passage. Cognition must be a conscious relation to an object. Kant indicates the "agreement" or "conformity" of a cognition with its object in his discussion of truth in the first *Critique*. He says there that the "nominal definition of truth, namely that it is the agreement of cognition with its object, is here granted and presupposed" (A58/B82). Since Kant allows for false cognition, his view must be that representations that are cognitions are such as to be able to agree or conform with their objects, and Kant construes such agreement as truth. Kant regards judgment (i.e., a specific sort of non-associative unity of concepts) as the bearer of truth, while denying that intuition is the sort of thing that can be true or false.[5] Finally, Kant construes cognition as always needing to be of a really—i.e., *metaphysically* —possible subject matter. As Kant states in a famous footnote in the B-preface of the first *Critique*:

> To *cognize* an object, it is required that I be able to prove its possibility (whether by the testimony of experience from its actuality or a priori through reason). (Bxxvin.)

Proper cognition may be pure, as when synthesizing a manifold of pure intuition (e.g., the pure intuition of space or time) with a concept (e.g., the concept of space as discussed in the Metaphysical Exposition of Space in the Transcendental Aesthetic). Proper cognition may also be empirical, as when synthesizing an empirical intuition (e.g., of touch or vision) with a concept. Kant often describes empirical cognition as "experience" (*Erfahrung*; see, e.g., B166, A176/B218, A189/B234), though empirical intuition and concepts are also related in what Kant calls "perception" (*Wahrnehmung*). In any case we shouldn't confuse Kant's use of "cognition", "empirical cognition", or "experience" with our less restrictive (or exact) contemporary usages of thee terms.

Finally, there is Kant's conception of "knowledge" (*Wissen*), which is the relation of acceptance or "holding for true" (*Fürwahrhalten*) that a cognizing subject takes to a judgment. Such a "holding" of a judgment is a kind of activity performed by the cognizer subject, with respect to a true judgment, on the basis of evidence or "grounds" to which the subject has access. Such holdings are the closest Kant comes to discussing what we would now call "doxastic propositional attitudes". In contemporary epistemology it is relatively common to treat the notion of belief as being the most general doxastic propositional attitude, and attitudes like knowledge to consist of belief, plus some further set of features (e.g. truth, indefeasibility, reliability, safety, etc.). This is not the case for Kant. Instead he takes knowledge to be that towards which all cases of acceptance or holding aim. Such acts of holding can fall short of knowledge for various reasons, and the ways in which they fall short correspond to what Kant calls "belief" or "faith" (*Glaube*) and "opinion" (*Meinung*).[6]

So a representation is the effect of a mind's receptive capacity being causally affected by something or by spontaneously generating its own representations. Such representations count as cognitions if they satisfy the three conditions of being conscious, truth-apt, and of really possible objects. Such cognitions are in a position to be *known* when the knower possesses sufficient evidence or "grounds" for accepting that the cognition is true. Insofar as such knowledge is systematically connected in a manner demonstrating the necessity of its various elements it is "science" (*Wissenschaft*), properly so called.

I.ii A priori & A posteriori

A variety of philosophers (e.g. Descartes, Leibniz, Hume) argue that at least some knowledge can be acquired purely through the activity of thinking, and that this knowledge is universal and necessary in scope. Hume's conception of knowledge of the "relation of ideas" provides an especially clear example. According to Hume, knowledge of necessary and universal truths is a function purely of knowledge of the relations of ideas (e.g. of the ideas or concepts `<bachelor>` and `<unmarried man>` or or `<triangle>` and `<three-sided plane figure>` (though even here there is some question as to whether Hume can articulate a genuine, as opposed to merely subjective, sense of "universal" and "necessary").

Kant agrees with Hume that a priori knowledge is independent of experience. In fact, he sees it as definitive of "pure" a priori knowledge that it be completely independent of experience. He contrasts such knowledge with "empirical" knowledge or knowledge *a posteriori*. A priori knowledge may be more or less 'pure' according to whether or not the concepts which make it up are themselves a priori knowable. Kant uses the example 'every alteration has a cause' as an example of *impure* a priori knowledge, since the concept `<alteration>` is empirical.

We should note one important point about Kant's use of "independence" in describing the a priori. Kant does not think that a priori knowledge is "independent" of experience in the sense that one need not have *any* experience in order to have knowledge. On the contrary, Kant thinks that *all* of our knowledge depends on our having experience of some kind or another—i.e. of the mind's being affected in one way or another—though he doesn't think this dependence entails that all our judgments are ultimately *justified* by experience. This is why Kant says that

> But although all our cognition commences with experience, yet it does not on that account all arise from experience. (CPR B1)

There seems to be two reasons for Kant's thinking this. First, we need experience in order for our cognitive faculties to function and develop. Second, we need particular experiences in order to acquire empirical concepts (e.g. red experiences in order to acquire the concept `<red>`). This is what distinguishes pure from impure a priori judgment. Impure a priori judgments are partially constituted by concepts that themselves must come from experience.

Kant's conception of a priori judgment as judgment that is independent of experience has long been taken by scholars writing in English to be a purely epistemological notion (e.g. (Kitcher 2006)). But Kant's conception of a priori cognition also plausibly has a metaphysical aspect related to the Aristotelian conception of understanding something from its ground or cause rather than from its effect (as discussed above). A priori cognition would then be cognition that facilitates or otherwise constitutes an understanding of *why* something exists, or is the way that it is.[7] So, for example, the axioms and postulates of Euclid's geometry allow us a priori knowledge of the properties of plane figures, not merely in the sense that such knowledge is independent of our experience of any particular bit of spatial extension, but because it allows us to understand *why* plane figures have the properties that they do. To proceed through Euclid's *Elements* is to proceed through a systematic explanation of why plane figures have the properties that they have, from the very natures of those planes figures, as constituted by the properties of space laid out in the axioms and postulates (or "common notions").

Kant contends that a priori cognition is possible for us only if it derives in part from our various rational capacities. As he puts it, "reason has insight only into what it itself produces according to its own design" (Bxiii). In other words, it is only if our rational capacities play a metaphysically explanatory role in constituting the objects of cognition and knowledge that we can say that we have a priori knowledge of those objects. Why does Kant think that we can know the extent to which these capacities make an explanatory contribution? As he says,

> it [viz. metaphysics] is nothing but the **inventory** of all we possess through **pure reason**, ordered systematically. Nothing here can escape us, because what reason brings forth entirely out of itself cannot be hidden, but is brought to light by reason itself as soon as reason's common principle has been discovered. (Axx)

Much of the rest of our discussion of both Kant and his German Idealist successors aims at explaining this obscure claim.

If a priori knowledge is, for Kant, knowledge that is (in some sense or other) independent of experience, that fact is not the only mark or indicator that some bit of knowledge is a priori. In addition, Kant argues, any bit of knowledge that is necessary and/or universal in scope is itself a priori.

> Necessity and strict universality are therefore secure indications of an a priori cognition, and also belong together inseparably. But since in their use it is sometimes easier to show the empirical limitation in judgments than the contingency in them, or is often more plausible to show the unrestricted universality that we ascribe to a judgment than its necessity, it is advisable to employ separately these two criteria, each of which is in itself infallible. (CPR B4)

Kant argues that this conception of a priori knowledge is presupposed in many empirical judgments as well as in particular sciences. He specifically points to mathematics (e.g. to the arithmetical judgment '5+7=12') and to physical judgments ('every alteration has a cause'). One of Kant's arguments arguments against Humean skepticism is that all of our empirical knowledge (even that knowledge which Hume thinks we have unproblematically) presupposes a priori knowledge, which itself requires that there be legitimate use of a priori concepts (i.e. concepts whose content cannot be derived from any sensory impression).

Kant thinks that there are many examples of judgments that we claim to know a priori, but he is interested primarily in a specific subset of those which constitute the subject matter of special *metaphysics*—viz. judgments concerning God, the soul (or mind), and immortality. One of Kant's primary aims is to determine whether metaphysical knowledge is possible, and if it is possible, what the extent and nature of that knowledge might be. Metaphysical knowledge is problematic, Kant argues, because unlike other forms of a priori knowledge, such as logic and mathematics, it is not at all obvious which metaphysical judgments are in fact correct and thus known,

and which are merely thought to be so. This is exemplified, Kant thinks, by the contentious disputes in which philosophers have long been involved. Kant thus hopes that, by giving a critique of reason—i.e. in an analysis of the nature of the intellect and the concepts or ideas it employs in rational inference about reality, he can demonstrate the extent to which metaphysics might count as a science, and thus rest on a secure set of claims.

I.iii The Analytic/Synthetic Distinction

A judgment is cognized (and knowable) a priori if it is cognized (and knowable) independently of experience. Kant thinks that this is not the only dimension according to which one can analyze a judgment. Kant also argues that all judgments, in addition to being classifiable as either a priori or a posteriori (or empirical), may also be classified as being either analytic or synthetic (http://plato.stanford.edu/entries/analytic-synthetic/).

An analytic judgment is one in which the predicate is "contained" in the concept. One way of understanding this notion of "containment" is via a claim about meaning. Accordingly, analytic judgments are those whose truth is known merely in virtue of knowing the meaning of the concepts constituting the judgment. For example, in the judgment "All bachelors are unmarried" the concept `<unmarried>` is part of the meaning of `<bachelor>` and so the truth of the judgment is grasped just by knowing the relevant meanings of its component concepts.

Kant also introduces several other markers of analyticity. In total Kant provides us with four different marks of analyticity. He says that in an analytic judgment the predicate is

1. 'contained' within the subject
2. 'identical' with the subject
3. analytic judgments are ones which are 'explicative' rather than 'ampliative'
4. analytic judgments are those knowable by means of application of the principle of non-contradiction

Which, if any of these markers is best thought of as the main characteristic of an analytic judgment? This is a disputed issue (cf. (Anderson 2005; Proops 2005)), though certainly, in all cases Kant is thinking of 'atomic' judgments of subject-predicate form.

I.iv The Synthetic A Priori

Kant argues, in ways similar to Locke, Hume, and Leibniz, that analytic judgments are knowable a priori. Staying with the containment metaphor, since the predicate is contained in the subject of an analytic judgment, there is no need to look beyond the judgment to the world (so to speak) in order to determine the truth value of the judgment. In this Kant is obviously in agreement with Locke, Hume, and Leibniz. Kant agrees with his empiricist predecessors in claiming that all a posteriori judgments are synthetic. Since the predicate is adding something new to the subject we must look beyond the judgment to the world—what we can experience—in order that we might determine the relevant judgment's truth or falsity. In non-empirical cases (like the bachelor example above) the judgment's truth is determined by the meanings of the concepts constituting it.

Kant's main innovation to the a priori/posteriori and analytic/synthetic schemas is to note that the analytic a priori and the synthetic a posteriori do not necessarily exhaust the realm of possible judgments. Here he essentially can be understood to deny that "Hume's Fork", which divides all knowledge into two classes of relations of ideas and matters of fact, is an adequate representation of the structure of human knowledge. According to Kant, there are also *synthetic a priori* judgments that are possible. Kant argues that causal judgments are a clear example.

> it is easy to show that in human cognition there actually are such necessary and in the strictest sense universal, thus pure a priori judgments. If one wants an example from the sciences, one need only look at all the propositions of mathematics; if one would have one from the commonest use of the understanding, the proposition that every alteration must have a cause will do; indeed in the latter the very concept of a cause so obviously contains the concept of a necessity of connection with an effect and a strict universality of rule that it would be entirely lost if one sought, as Hume did, to derive it from a frequent association of that which happens with that which precedes and a habit (thus a merely subjective necessity) of connecting representations arising from that association (CPR B4-5)

> Take the proposition: "Everything that happens has its cause." In the concept of something that happens, I think, to be sure, of an existence that was preceded by a time, etc., and from that analytic judgments can be drawn. But the concept of a cause lies entirely outside that concept, and indicates something different than the concept of what happens in general, and is therefore not contained in the latter representation at all. How then do I come to say something quite different about that which happens in general, and to cognize the concept of cause as belonging to it, indeed necessarily, even though not contained in it? What is the unknown=X here on which the understanding depends when it believes itself to discover beyond the concept of A a predicate that is foreign to it yet which it nevertheless believes to be connected with it? (CPR B13-14)

Kant argues here that our judgments concerning events presuppose that they do not just *occur* but are *caused to occur*, that we know this to be true necessarily and universally, and that we have no explanation of this fact unless the judgments we make in such cases are synthetic a priori judgments. The question remains, however, just how such synthetic a priori judgments could be possible. What is it that could link the concepts in a subject-predicate judgment such that the truth of the judgment holds necessarily and universally, while its nevertheless being true that the predicate is not contained in the subject of the judgment, and thus that the judgment is not analytic?

> Now the entire final aim of our speculative a priori cognition rests on such synthetic, i.e., ampliative principles; for the analytic ones are, to be sure, most important and necessary, but only for attaining that distinctness of concepts which is requisite for a secure and extended synthesis as a really new acquisition (CPR B13-14)

Kant thus argues that we need to explain how we could come to have such synthetic a priori judgments, and that the explanation of the possibility (and actuality!) of significant portions of our knowledge rests on this, including mathematics and natural science. Crucially as well, Kant contends that the status of metaphysics as a science depends on determining the basic synthetic a priori cognitions on which it depends (i.e. its "principles") and explaining our knowledge of them.

I.v Kant's 'Copernican Revolution'

In a famous passage Kant compares his critical philosophy to the central contribution on Nicolas Copernicus.

> Up to now it has been assumed that all our cognition must conform to the objects; but all attempts to find out something about them a priori through concepts that would extend our cognition have, on this presupposition, come to nothing. Hence let us once try whether we do not get farther with the problems of metaphysics by assuming that the objects" must conform to our cognition, which would agree better with the requested possibility of an a priori cognition of them, which is to establish something about objects before they are given to us. This would be just like the first thoughts of Copernicus, who, when he did not make good progress in the explanation of the celestial motions if he assumed that the entire celestial host revolves around the observer, tried to see if he might not have greater success if he made the observer revolve and left the stars at rest. Now in metaphysics we can try in a similar way regarding the intuition of objects. (CPR Preface, Bxvi-xvii)

So just as Copernicus sought to explain the apparent motions of objects in the heavens in terms of the movement of the earthbound observer, so too Kant attempts to account for the apparent characteristics of objects in terms of our cognitive faculties and the cognitive conditions under which we know the objective world. In Kantian phrase, instead of assuming that our knowledge of the object must conform it *the object*, we assume that it conforms to *our knowledge*.

I.vi Transcendental Idealism

Kant's name for the position he articulates according to which objects must conform to our way of knowing them is 'Transcendental Idealism.' Though the exact meaning of Transcendental Idealism is much disputed by Kant's interpreters, it is clear that he intends at least two things by it.[8]

First, according to Transcendental Idealism, space and time are neither independent subsisting entities (as was suggested by Newton), nor object-dependent orders of relations between entities (as was argued by Leibniz). Instead, they are mind-dependent 'forms of intuition.' They are the characteristic ways in which we experience things rather than either being independent things that we experience, or relations between things that we experience. Space and time are 'empirically real' — they are fundamental features of the empirical world that we experience. But they are not real 'in themselves.' They have no ultimate reality apart from our capacity for experience.

Second, in addition to the transcendental ideality of space and time, to which all experienced objects must conform, Kant argues that empirical reality is itself structured by a privileged set of a priori concepts.

> experience itself is a kind of cognition requiring the understanding, whose rule I have to presuppose in myself before any object is given to me, hence a priori, which rule is expressed in concepts a priori, to which all objects of experience must therefore necessarily conform, and with which they must agree. As for objects insofar as they are thought merely through reason, and necessarily at that, but that (at least as reason thinks them) cannot be given in experience at all - the attempt to think them (for they must be capable of being thought) will provide a splendid touchstone of what we assume as the altered method of our way of thinking, namely that we can cognize of things a priori only what we ourselves have put into them (CPR Preface, Bxvii-xviii)

Kant here argues that the object which appear to one in perceptual experience, or 'intuition' as he calls it, also must conform to our basic conceptual scheme. He explains what he means here in the last sentence: objects must conform to our conceptual scheme because that scheme makes possible the experience of such objects.

Though basic elements of Kant's 'Copernican' strategy remain unclear, the basic idea is that Kant argues that what makes synthetic a priori knowledge possible is the structure of our cognitive faculties, including the pure forms of intuition and a privileged set of a priori concepts. These forms and concepts jointly make experience possible and allow us to draw inferences that hold with necessity and universality concerning objects encountered in experience. What's more, Kant argues that because a priori concepts are necessary for experience in general, we can know that those concepts are applied legitimately, since he is taking it as obvious that we have experience.

II. An analytic of pure understanding

We've seen that Kant construes synthetic a priori cognition as a kind of representation that is universal and necessary in scope, justifiable independently of experience, and dependent on a basis of truth that is not itself conceptual in nature. Kant's transcendental idealism contends that this source of independent non-conceptual truth lies in the purely subjective "forms" of space and time that structure any possible sensory experience. These a priori forms of sensory experience are thus partially explanatory of how we can have synthetic a priori cognition.

However, we also saw that it is Kant's contention that cognition requires, for us, a combination of intuition and concept (or judgment). This means that the kind of "pure" (i.e. wholly non-empirical) synthetic a priori cognition that Kant sees as the basis for metaphysics also requires pure a priori concepts, in addition to the sensible forms. This is where the "analytic of the understanding" and the related notion of an "analytic of concepts" comes in.

Kant relates the project of an analytic of understanding to that of an "analytic of concepts" as follows:

> I understand by an analytic of concepts not their analysis, or the usual procedure of philosophical investigations, that of analyzing the content of concepts that present themselves and bringing them to distinctness, but rather the much less frequently attempted **analysis of the faculty of understanding** itself, in order to research the possibility of a priori concepts by seeking them only in the understanding as their birthplace and analyzing its pure use in general; for this is the proper business of a transcendental philosophy; the rest is the logical treatment of concepts in philosophy in general. (A66/B90-1)

Kant's point here is that we must be able to come to clarity, not just regarding our concepts, but rather regarding the nature of the faculty that generates these concepts itself—i.e. the understanding. So just as Kant sees the nature of our sensible receptivity as providing the basis for the synthetic nature of cognition, in the pure sensible forms of space and time, he likewise sees the nature of our intellect (or the understanding in particular) as providing the basis for our being able to achieve cognition of whatever may be represented by sensibility, insofar as we can derive from the nature of the understanding's activity some set of concepts for use in metaphysics.

There is a great deal more to say about the nature of this analysis, and I will discuss it more in subsequent notes. For now, what is important is that Kant sees the possibility of metaphysics as a science in the proper sense as depending on an explanation of what makes any proper science possible. Since all proper sciences (e.g. mathematics and physics) make synthetic a priori claims, this amounts to an investigation of the nature and source of synthetic a priori cognition, and the forms of knowledge it engenders. It is Kant's contention that such cognition is only possible if it relies on the structure of the rational mind, and in particular on the "forms" of sensibility (representations of space and time) and the understanding (the a priori concepts Kant calls the "categories"). Together, these sources of representation provide synthetic a priori cognition upon which all science is built.

C. What are the limits of rational enquiry (science) and explanation?

Now that we have the basic structure of Kant's project in view, it should be relatively straightforward to understand his answer to this question. Kant thinks that all rational inquiry strives to be "scientific" in his sense of that term. So that means that all enquiry depends (in one way or another) on synthetic a priori cognition. But we've seen that such cognition is only possible given the combined contributions of sensibility (specifically the representations of space and time) and understanding (specifically the concepts called the "categories"). Kant thus thinks that science is limited to what falls in the purview of these two contributions—i.e. the spatial and temporally structured empirical world as understood through our most basic concepts, the categories.

This conclusion has some fairly radical implications for special metaphysics—i.e. the study of the soul, the cosmos, and God. Though Kant agrees that we have such concepts, and that they can be put to legitimate purposes, such as helping structure inquiry, Kant denies that we can have the sort of cognition of them necessary for scientific understanding, primarily because they are not the sorts of objects that can be given through sensibility. Since being given an object in sensibility is a condition of cognition, we cannot have cognition, or ultimately a science, of the soul, the cosmos, or God.

D. Why does metaphysics tend to overstep its limits?

Kant's restriction of a science of metaphysics to what can be experienced in space and time presents a difficulty. It seems that we are rationally drawn to constructing explanations that transcend the bounds of sense—of what can be given through sensibility (in space and time).

Kant's explanation is that we need to look to the nature and activity of reason (as a metal capacity) itself. On Kant's view, reason is the unique capacity for articulating and grasping explanations—which Kant construes in terms of inference—and it demands a *complete* explanation for any given fact.

> If the understanding may be a faculty of the unity of appearances by means of rules, then reason is the faculty of the unity of the rules of the understanding under principles. (A302/B358-9)
>
> reason, in inferring, seeks to bring the greatest manifold of cognition of the understanding to the smallest number of principles (universal conditions), and thereby to effect the highest unity of that manifold. (A305/B361)

The function of reason is thus not to generate experience (or empirical cognition) in the first place. This is the task of the understanding working together with sensibility (A307/B363–4). The starting point for reason is judgments about experience. Reason's basic function is to ask about any given empirical judgment: *why*? Moreover, once reason finds an answer to this question, it subjects that answer to the same question – *why*? This iterative process of finding answers to why questions results in what Kant calls "comprehension" (*Begreifen*), which in its most complete form is a perfect understanding of why things are they way that they are.

The laws of reason's activity thus encourage a use of it that transcends the bounds of what can be cognized, and thereby comprehended. Hence, an "uncritical" use of reason, one that does not take note of the boundaries of cognition, will push inquirers towards holding positions that cannot be rationally defended. Kant calls this unavoidable activity of reason the "dialectic" of reason's use, and the illusions that unavoidably result from it "transcendental illusion".

> **transcendental illusion** [contains principles] which instead, contrary to all the warnings of criticism, carries us away beyond the empirical use of the categories, and holds out to us the semblance of extending the pure understanding [beyond the limits of experience/cognition]. (A295/B352)
>
> The cause of this [i.e. of reason's tendency to overstep its bounds] is that in our reason (considered subjectively as a human faculty of cognition) there lie fundamental rules and maxims for its use, which look entirely like objective principles, and through them it comes about that the subjective necessity of a certain connection of our concepts on behalf of the understanding is taken for an objective necessity,the determination of things in themselves. [This is] an illusion that cannot be avoided at all. (A297-B353-4)

Kant contends that reason's search for complete explanation leads to its generation of concepts, which Kant calls "ideas", that refer to the ultimate or "unconditioned" conditions of all other objects. In the *Critique of Pure Reason* Kant considers the dialectical illusions to which three such concepts are subject—viz. the concepts of special metaphysics, the soul, the cosmos, and God.

> Now what is universal in every relation that our representations can have is (1) the relation to the subject, (2) the relation to objects, and indeed either as appearances or as objects of thinking in general. If we combine this subdivision with the above division, then all the relation of representations of which we can make either a concept or an idea are of three sorts: (1) the relation to the subject, (2) to the manifold of the object in appearance, and (3) to all things in general…The thinking subject is the object of psychology, the sum total of appearances (the world) is the object of cosmology, and the thing that contains the supreme condition of the possibility of everything that can be thought (the being of all beings) is the object of theology. (A333–4/B390–1)

Thus, Kant thinks philosophers have been mistaken that we can have any (theoretical or speculative) cognition through reason alone, but only the illusion thereof. This also means that the objects to which the ideas `<God>`, `<soul>`, and `<cosmos>` refer can never be subjects of cognition. The ideas thereby lack any "constitutive use" for experience, and thus cannot be part of science proper.

E. In what sense is it rational to believe in the traditional objects of metaphysics?

Nevertheless, Kant thinks that reason's ideas have a legitimate use, and that their objects, such as God or the soul, can be legitimate and rational objects of belief. The ideas of reason can have such a positive use by acting as "maxims" for theory construction and the creation of a unified theory of nature.

This unity is only a "projected" unity (A647/B675), a mere "regulative ideal", but it plays a significant role in how we rationally inquire with respect to the empirical world. Kant gives the following illustrations of such "regulative" uses of reason's ideas: reason's drive towards complete explanation pressures us to search for fundamental (chemical) elements and powers in nature (A646/B674, A648–9/B676–7), employ concepts of ideal entities not to be found in nature (e.g. pure earth, water and air, A646/B674), develop hypotheses advancing universal laws of nature (A646–7/B674–5) and classify the organic and inorganic natural worlds into genera and species (A653–7/B681–5). The operative maxims are the three principles of "genera", "specification" and "affinity", instructing us to seek out respectively "homogeneity", "variety" and "continuity" among natural forms (A651–64/B679–92).[9]

This regulative use for reason's ideas contrasts with a "constitutive" use of those ideas, as they are applied in traditional Special mteaphysics. But as we saw above, Kant's critical position denies that there is a constitutive use for the ideas. Reason's ideas have no knowable application to object. It can cognize no other objects than what may be given to it by the understanding's generation of experience from the material given by sensibility.

> the transcendental ideas are never of constitutive use, so that the concepts of certain objects would thereby be given, and in case one so understands them, they are merely sophistical (dialectical) concepts…however, they have an excellent and indispensably necessary regulative use…of directing the understanding (A644/672)

The error of traditional metaphysics is thus to construe the ideas of reason as "constitutive" rather than merely "regulative" principles for constructing complete explanations.

Kant ultimately thinks that a variety of ideas admit of some sort or another of rational acceptance. Perhaps most famously, he argues in the *Critque of Practical Reason* that we are rationally required to believe in the existence of God and of our own immortal souls in order to fulfill the requirements of practical rationality, namely, striving to achieve the "highest good"—the unity of virtue apportioned to happiness (more colloquaially, the world in which everyone gets their "just desserts"). In Kant's view, we may not truly *know* that there is a God or that we have souls in the relevant sense, but it is rational to believe so. As Kant famously puts it,

> Thus I cannot even **assume God, freedom and immortality** for the sake of the neeessary practical use of my reason unless I simultaneously **deprive** speculative reason of its pretension to extravagant insights; because in order to attain to such insights, speculative reason would have to help itself to principles that in fact reach only to objects of possible experience, and which, if they were to be applied to what cannot be an object of experience, then they would always actually transform it into an appearance, and thus declare all **practical extension** of pure reason to be impossible. Thus I had to deny **knowledge** in order to make room for **faith**; and the dogmatism of metaphysics, i.e., the prejudice that without criticism reason can make progress in metaphysics, is the true source of all unbelief conflicting with morality, which unbelief is always very dogmatic. (Bxxix-xxx)

It is Kant's hope that the Critical philosophy not only sets metaphysics on the path of science, but that it also shows how faith and reason can coexist together and are ultimately even mutually supporting. This connection between faith and reason will continue to exert its influence in German philosophy, even by those who ultimately reject many of Kant's other doctrines.

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1. See (Pasnau 2014, 2018). ↩
2. See (Stang 2021) for helpful discussion. Note that I use angle brackets to refer to the concepts that would normally be expressed by the term within; for example, `<substance>` is the concept of substance. I use italics to denote propositions; the sentence “Gold is a yellow metal” expresses the proposition *Gold is a yellow metal*. I refer to the relation between an object and a concept whose extension includes that object as “instantiation,” for example, particular substances instantiate `<substance>`. ↩
3. For an explicit reading of Kant as engaged in such a revisionary project and epistemologically focussed project see (Kitcher 2011, 5–6) ↩
4. The issue of how to characterize cognition is becoming its own cottage industry. See (Smit 2000, 2009; Schafer 0BCb, 0BCa; Gomes and Stephenson 2016; Tolley 2017; Watkins and Willaschek 2017a, 2017b). ↩
5. See (Heis 2013, 277–78; McLear 2016). ↩
6. See (Chignell 2007a, 2007b) for discussion, though Chignell ends up retaining, mistakenly I think, much of the “belief-first” conception of knowledge in his account of *Fürwahrhalten*. ↩
7. See (Smit 2009; Stang 2019; Watkins 2019b, 2019a; Melamedoff-Vosters 2021) ↩
8. See (Ameriks 1982; Stang 2016). ↩
9. For this way of putting it see (Gardner 1999, 144). ↩

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