

Kant on causal laws and powers

1. Introduction

Toward the end of section 7 of his *Enquiry Concerning Human Understanding* Hume famously defines an objective cause as an event that is followed by another event such that all events similar to the first are followed by events similar to the second. This definition derives from an ontology that posits events as ontologically primitive in the sense of indivisible spatio-temporal units. Hume believes that as indivisible spatio-temporal units, events are entirely loose and separate. If they are entirely loose and separate, then a strictly empiricist understanding of causality cannot rely on the notions of power or necessary connection. And if this understanding cannot rely on the notion of necessary connection, then causal laws have to be seen as nothing but inductively inferred from observations of instances of these laws.

Most commentators dealing with Kant's notion of causality hold that Kant agrees with Hume on his characterization of causes as events, and that he disagrees with him on the question of whether causal relations are necessary and universal: of whether we can know if there is a necessary connection between cause and effect, and of whether we can infer in a non-inductive manner that there are causal laws. These commentators are divided over the question of where and how Kant argues for the necessity and universality of causal relations, and over the question of whether his argument is successful: while some (most notably Friedman and Guyer) believe that Kant's argument in favor of the second analogy of experience is meant to demonstrate both the necessity and universality of causal relations, others (most notably Allison and Strawson) maintain that this argument is supposed to demonstrate only the necessity of causal relations; and while some (most notably Strawson and Melnick) believe that Kant fails to demonstrate the necessity or universality of causal relations, others (most notably Allison, Friedman and Guyer) suggest that he succeeds. But virtually all commentators agree that what Kant has in mind when using the term 'cause' is an event.

Eric Watkins's work on Kant's notion of causality represents an important exception to this agreement. Watkins (2005, pp. 251-252, 255-256) points to a neglected passage in the second analogy of experience which indicates that what Kant means by 'cause' is not an event but a causal power: a power or disposition that is borne by a substance, and that, when active, brings about its effect, i.e. a change of the states of another substance, by generating a continuous flow of intermediate states of that substance. Watkins concedes that for Kant, an effect is an event. But he also argues at length (Watkins 2005, pp. 232-237) that Hume and Kant favor different ontologies: that for Hume, events are instantaneous states of

affairs at particular moments in time, while for Kant they are objective successions of the states or determinations of a thing.

Watkins has to be credited with pointing out in a particularly clear and thorough fashion that for Kant, events are not the same as for Hume, and that what Kant means by 'cause' cannot be an event (in either the Humean or Kantian sense). Watkins's analysis of Kant's understanding of causes as powers comes with a number of highly interesting claims of which at least three stand out as particularly noteworthy. These three claims state that

- (1) Kant's "main" argument in favor of the second analogy is supposed to show that a causal power is an ontological or metaphysical condition of the possibility of knowledge of an objective succession of the determinations of a substance (cf. Watkins 2005, pp. 200, 209-210).
- (2) a causal power is the ground of the determinations of a thing; that as ground of the determinations of a thing, a causal power cannot change; that as unchanging ground, a causal power must bring about the same effects; and that a causal power that brings about the same effects gives rise to causal laws (Watkins 2005, pp. 287-291).
- (3) "Hume's and Kant's ontologies are radically different," and that "the lack of a shared vocabulary makes it impossible for one [...] to find a refutation of Hume's position in Kant's explicit arguments" (Watkins 2005, p. 17).

Watkins substantiates claim (1) by presenting textual evidence, and by emphasizing an alleged continuity between the second analogy and elements of Kant's pre-critical philosophy. He argues for claim (2) by elaborating Kant's understanding of causes as grounds. And he defends claim (3) by pointing out that even if Kant's argument in the second analogy managed to show that a causal power is a necessary condition of the possibility of (knowledge of) an event, this argument wouldn't amount to a refutation of Hume's position since an event for Kant is not the same as for Hume. What Kant is attempting to do instead is "to develop a comprehensive philosophical account that represents a fundamentally new alternative to Hume's position", and that obviates "the very framework that Hume's approach presupposes" (Watkins 2005: 386).

Watkins's analysis of Kant's understanding of causes as powers and his defense of claims (1) – (3) amount to one of the finest pieces of Kant scholarship in recent decades. It's important to see, however, that claims (1) – (3) are problematic. Claim (1) is problematic because textual evidence can also be presented for the claim that Kant's main argument aims to establish the category of causality as a necessary condition of the possibility (or transcendental condition) of objective successions, and because architectonic considerations suggest that there are important discontinuities between the second analogy and elements of Kant's pre-critical philosophy. Claim (2) is problematic because a substantial part of it, i.e. the

claim that grounds don't change, cannot be attributed to Kant. Watkins in fact neglects an important passage in which Kant endorses the opposite claim. In this passage (from the first part of the Appendix to the Transcendental Dialectic, another passage that is relatively neglected in the literature), Kant remarks that the effects of causal powers are so diverse that one must assume as many powers as there are effects. In the same passage, Kant remarks that reason in its hypothetical (or inductive use) can combine various diverse causal powers to causal powers that are comparatively fundamental, or to one causal power that is absolutely fundamental: while the comparatively fundamental powers give rise to causal laws, the absolutely fundamental power may also be considered transcendently as corresponding to the category of causality. But what this means is that while Kant may disagree with Hume on the nature of causes, he agrees with him on the inductive nature of inferences of causal laws. Finally, claim (3) is problematic because it conflicts with the many passages in the *Critique of Pure Reason* and related works (such as the *Prolegomena*)¹ in which Kant seems to suggest that what he aims at is a direct refutation of Hume's position on causality. Claim (3) definitely deserves detailed treatment. A *prima facie* objection to this claim could state that while Hume's and Kant's ontologies of events are indeed radically different, Kant's critical philosophy might nonetheless possess the conceptual resources needed to effectively criticize Hume's ontology. Note, for instance, that Hume's ontology of events seems to be expressed by the thesis of the second antinomy, and that Kant believes that he can show that this thesis is false.² But developing this objection in closer detail goes beyond the scope of this paper and has to be deferred to another occasion. The present paper will therefore confine itself to a criticism of claims (1) and (2).

It will proceed in four stages. The next section will exegetically analyze central passages of the *Critique of Pure Reason* in order to clarify what Kant believes causality essentially is. Watkins's emphasis on a continuity between the second analogy and elements of Kant's pre-critical philosophy leads him to shy away from conceiving of causal powers as corresponding to the category of causality. The next section, however, will argue that this is precisely what Kant has in mind: for Kant, the concept of a causal power is the pure and a priori concept of a power that is borne by a substance, and that, when active, brings about its effect, i.e. a change of the states of another substance, by generating a continuous flow of intermediate states of that substance. The third section will examine Kant's main argument in favor of the second analogy and argue against claim (1) that this argument is meant to establish the

¹ Cf. especially *Prolegomena*, § 27.

² In its *Prolegomena* formulation, the thesis of the second antinomy states that "[e]verything in the world is constituted out of the *simple*" (*Prolegomena*, § 51). Kant holds that this thesis and its antithesis can be shown to be false (cf. *Prolegomena*, § 52c). Also cf. A434-437/B462-465, A531/B559. Citations from the *Critique of Pure Reason* are located using the standardized A and B pagination which refers to the first (1781) and second (1787) edition, respectively.

category of causality as a transcendental condition of events. The fourth section will discuss the Kantian analysis of fundamental causal powers in the first part of the Appendix to the Transcendental Dialectic and argue against claim (2) that according to Kant (and Hume), we cannot infer in a non-inductive manner whether there are causal laws.

The fifth and final section will point out that interpreting the Kantian concept of causality in terms of powers locates the Kantian position on causality in close proximity to contemporary causal powers ontology. Four of the central tenets of this ontology state that (i) the necessity of the connection between powers or dispositions³ and their manifestations is *de re*, rather than *de dicto*, that (ii) some properties are dispositional, that (iii) some properties have dispositional essences, and that a property *P* has a dispositional essence if and only if that essence is wholly constituted by a causal power and *P* invariably endows its instances with the same dispositions, and that (iv) causal laws are universal descriptions of dispositional essences, and that these descriptions are metaphysically necessary because their truth is guaranteed by the dispositional essences of properties in all possible worlds in which these properties exist. Kant can be said to endorse specific variants of tenets (i) and (ii): his endorsement of (i) follows from his characterization of the second analogy as synthetic and a priori, and his endorsement of (ii) from his main argument in favor of the second analogy and his metaphysical deduction of the categories. Watkins also ascribes to Kant variants of tenets (iii) and (iv) when defending claim (2). But the fourth section will show that Kant cannot be taken to hold these tenets.

The fifth section will argue that the Kantian variants of tenets (i) and (ii) are particularly interesting because unlike many of the variants endorsed by contemporary power theorists, they aren't open to the sort of objections that Humeans raise to tenets (i) and (ii). These Humean objections state that the necessity of the connection between a disposition (or power) and its manifestation cannot be natural (*de re*) but only conceptual (*de dicto*), that dispositional properties do not exist at all, or that dispositional properties, if there are any, are categorically based. While the variants of tenets (i) and (ii) endorsed e.g. by Harré et al. and Molnar appear to be open to (parts of) these objections, Kant can be shown to be able to reject these objections by pointing out that the connection between a causal power and its manifestation is necessary in the sense of "synthetic a priori", that causal powers exist because the category of causality is a transcendental condition of events, and that causal powers can't be categorically based because as category, the pure and a priori concept of causal power is irreducible to any other concept (including that of substance).

³ The terms "power" and "disposition" will be used interchangeably in the remainder.

2. The category of causality as pure and a priori concept of causal power

What does Kant have in mind when using the terms ‘cause’ and ‘causality’? In order to answer this question, at least four passages in the *Critique* have to be accounted for. The first passage is that of the metaphysical deduction of the categories, where Kant develops the idea that one and the same function of the understanding that “gives unity to the mere synthesis of different representations *in a judgment* also gives unity to the mere synthesis of different representations *in an intuition*” (A79/B104-105). While as function that gives unity in a judgment this function is referred to as logical function of the understanding in judgments, the same function “is called a pure concept of the understanding” (A79/B105) or “category” when it is considered as giving unity in an intuition. In the table of categories, the category of causality is the second category in the third group of three categories of relation. As all categories are “original pure concepts of synthesis” (A80/B106), the category of causality cannot be reduced to or derived from any of the other categories (in particular the first category in the group of categories of relation, the category of substance). The logical function of the understanding in judgments that corresponds to the category of causality is the logical function of hypothetical relation, a relation that Kant also characterizes as relation “of the ground to the consequence” (A73/B98) or as relation between “*antecedens* and *consequens*” (A75/B100).⁴

The second passage to be accounted for gives a somewhat loose definition of the concept of cause: it says that this concept “always requires that something *A* be of such a kind that something else *B* follows from it *necessarily* and *in accordance with an absolutely universal rule*” (A91/B123-124). This definition is loose because it doesn’t specify what is meant by “something *A*” and “something *B*”. Some commentators (e.g. Allison⁵) hold that this definition is reminiscent of the definition that Hume (2010 [1748], p. 146) offers toward the end of section 7 of his *Enquiry*: “we may define a cause to be *an object, followed by another, and where all the objects similar to the first, are followed by objects similar to the second.*” Kant’s definition differs from Hume’s, of course, in that the latter makes no mention of a necessary relation between cause and effect. But one could think of the first as reminiscent of the second if *A* and *B* turned out to be of the same ontological type as the objects mentioned in Hume’s definition. Hume thinks of these objects as events that “seem entirely loose and separate” (Hume 2010 [1748], p. 144). They seem entirely loose and separate because they are spatio-temporal units, and because spatio-temporal units aren’t real unless they are

⁴ For a pertinent account of the conceptual relation between the logical functions of judgments and the categories, cf. Longueness (1998).

⁵ Allison (2004, p. 247) understands this definition as reminiscent of Hume’s definition when interpreting it as saying that “given an *A*-type event, together with certain standing conditions, a *B*-type event will invariably follow.”

“perfectly indivisible, and incapable of being resolv’d into any lesser unity” (Hume 2009 [1739], p. 25). Spatio-temporal units couldn’t be perfectly indivisible unless space and time were only finitely divisible, and space and time, according to Hume (2009 [1739], p. 26), are indeed only finitely divisible: “every moment must be distinct from, and posterior or antecedent to another. ’Tis certain then, that time, as it exists, must be compos’d of indivisible moments. [...] The infinite divisibility of space implies that of time [...]. If the latter [...] be impossible, the former must be equally so.” If the definition given by passage A91/B123-124 is to be reminiscent of Hume’s definition, then *A* and *B* have to be thought of as indivisible spatio-temporal units (i.e. events in the Humean sense). But do they represent indivisible spatio-temporal units?

The third passage is a definition of the schema of causality: of that intellectual-sensible hybrid that Kant thinks is necessary to guarantee the application of the category of causality to appearances. This definition states that the “schema of the cause and of the causality of a thing in general is the real upon which, whenever it is posited, something else always follows. It therefore consists in the succession of the manifold insofar as it is subject to a rule” (A144/B183). This definition brings up the same questions as before: Is this definition reminiscent of Hume’s definition? Is the manifold in question a manifold of events in the Humean sense?

Finally, the fourth and perhaps most important passage states that “causality leads to the concept of action, this to the concept of power, and thereby to the concept of substance. [...] Where there is action, consequently activity and power, there is also substance, and in this alone must the seat of this fruitful source of appearances be sought. [...] Now since all effect consists in that which happens, consequently in the changeable, which indicates succession in time, the ultimate subject of the changeable is [...] the substance. For according to the principle of causality actions are always the primary ground of all change of appearances, and therefore cannot lie in a subject that itself changes, since otherwise further actions and another subject, which determines this change, would be required. Now on this account action, as a sufficient empirical criterion, proves substantiality” (A204-205/B249-250).⁶ To the reader of today this passage certainly comes as a bit of a surprise. While the first three passages deal with the concept of causality directly, the fourth passage is concerned with the concept of substance and (even if it appears in the Second Analogy) only uses the concept of causality to develop an argument that (just like Kant’s argument in the first analogy) is supposed to prove (the objective validity of the category of) substantiality. Yet while the first

⁶ Translation modified: the translators translate “Kraft” by “force” in A204-205/B249-250 and by “power” in A648-651/B676-679 (cf. section V below); since in both contexts “Kraft” means the same thing and “power” has been the preferred expression so far, “force” in A204-205/B249-250 has been replaced by “power”.

three passages seem to be loose enough to allow for an understanding of causality in accordance with e.g. Hume's definition, the fourth passage is much more specific in that it distinguishes a causal power with a substance as its bearer, manifestations of this power (objective successions of the states of another substance) and activities or actions as the ground of these manifestations.

Kant elaborates on this distinction by claiming that all alteration (or temporal change of the states of a thing) complies with the so-called law of continuity: "Now every alteration has a cause, which manifests its causality in the entire time during which the alteration proceeds. Thus this cause does not produce its alteration suddenly (all at once or in an instance), but rather in a time [...]. All alteration is therefore possible only through a continuous action of causality. [...] That is, now, the law of the continuity of all alteration, the ground of which is this: that neither time nor appearance in time consists of smallest parts, and that nevertheless in its alteration the state of the thing passes through all these parts, as elements, to its second state" (A208-209/B253-254). Together with the previous passage, this passage presents quite a clear picture of what Kant has in mind when using the terms "causality" or "cause". A cause is a power that is borne by a substance. When this power is active or acts, it brings about its effect that, for Kant, is an event in the sense of 'a change of the states or determinations of another substance' or 'an alteration of this other substance'. When bringing about its effect, the causal power acts uniformly: it doesn't jump from one boundary state to the next but generates a continuous flow of intermediate states of a substance. An epistemic subject cannot perceive these intermediate states but only the boundary states. It is clear, however, that a substance has to pass through these intermediate states when a change from one of its boundary states to the next is brought about by the action of a causal power that is borne by another substance.

Carrier (2003, p. 60) adequately describes the Kantian conception of causality when saying that "Kant accepts Leibniz's causal account of time order but adds a transcendental element." But Watkins (2005, pp. 256-7) has to be credited with working out this conception in clearest detail. Watkins may also be read as providing a good explanation for why Kant's contemporary readers might not have been as surprised by Kant's sudden talk of causal powers as today's readers of Kant: while today's theories of causality are heavily influenced by the views of Hume,⁷ the powers conception had been the prevailing conception of

⁷ Remember that toward the end of section 7 of his *Enquiry*, Hume (2010 [1748], p. 146) in fact offers three definitions: "we may define a cause to be *an object, followed by another, and where all the objects similar to the first, are followed by objects similar to the second*. Or, in other words, *where, if the first object had not been, the second never had existed*. [...] We may [...] form another definition of *cause*; and call it, *an object followed by another, and whose appearance always conveys the thought to that other*." While Hume takes the second definition to be synonymous with the first (he begins the second definition by "in other words"), it is clear that both definitions do not amount to the

causality in the 18th century (cf. Watkins 2005, chapter 1). Watkins finally has to be credited with pointing out in a particularly clear and forceful fashion that the Kantian conception of causality is inconsistent with an event-event conception of causality:⁸ according to the Kantian conception, only the second relatum of the causal relation is an event – but an “event” in the Kantian sense of “alteration of a substance” (or “change of the determinations or states of a thing”), and not an event in the Humean sense of “indivisible spatio-temporal unit” (cf. Watkins 2005, p. 232-237).

It follows that the loose definitions given by the second and third passages quoted above must not be read in accordance with Hume’s definition. Hume’s definition relates to constant conjunctions of types of indivisible spatio-temporal units. The loose definitions given by the second and third passages, by contrast, must be read as referring to a causal power (“something *A*”, “the real”) and an event or alteration of a thing (“something *B*”, “the succession of the manifold”) that follows from this power “*necessarily and in accordance with an absolutely universal rule*” or “insofar as it is subject to a rule”. If this reading is correct, then Kant can be taken to claim that an event is necessarily connected to a power in accordance with an absolutely universal rule.

Given the first passage quoted above (the passage from the metaphysical deduction), it is only a small step to see that what Kant means by ‘cause’ and ‘causality’ is the pure and a priori concept (or category) of a power that is borne by a substance, and that, when active, brings about its effect, i.e. a change of the states of another substance, by generating a continuous flow of intermediate states of that substance. This concept is pure in that it doesn’t presuppose “the actual presence of the object” (A50/B74). It doesn’t presuppose the actual presence of the object because causality cannot be experienced at all. And (as will become clear in the following section) causality cannot be experienced because nothing can be experienced unless it is temporally determined, and because a causal power cannot be temporally determined because temporal determination is the result of the activity of a causal power. The pure concept of causality is also *a priori* because it is (as will also become clear

same thing: while the first defines causality (or generic causation) in terms of an indicative conditional, the second defines singular causation in terms of a subjunctive or counterfactual conditional. Hume’s definitions have been at the origin of at least four of the contemporary accounts of causality that one may loosely refer to as mainstream: regularity and objectivist probabilistic accounts relate to a deterministic or indeterministic reading of the first definition; counterfactual accounts (perhaps including the so-called interventionist account) go back to the second definition; and subjectivist probabilistic accounts stem from the third definition.

⁸ Among the authors who mistakenly ascribe to Kant an event-event conception of causality is Allison (2004, p. 226) who states that “in the case of the causal relation, the analogy enables us to determine *a priori* that for any given event *y*, there must be some antecedent event *x* from which *y* follows in accordance with a rule.” Melnick (2006, pp. 169, 171) makes a similar mistake when arguing that “the effect is supposed not just to follow the cause but to emerge from it, derive from it, come out of it, etc.”, and that it is Kant’s claim that “every event at the later time must emerge from some event at the preceding time.”

in the following section) a transcendental condition of the perception (or experience) of an objective succession. The schema of the concept of causality, by contrast, is the succession of the states (“the manifold”) of a substance insofar as this succession is temporally determined by the activity of a causal power.

When considering the conjunction of all four passages quoted above, the step of conceiving of causal powers as corresponding to the category of causality appears to be rather straightforward. Why does it seem that Watkins doesn’t want to take this step? It will become clear in the following section that his primary reason for not taking this step lies in his emphasis on an alleged continuity between Kant’s argument in the Second Analogy and certain elements of his pre-critical philosophy. The following section will also argue, however, that this emphasis is misguided.

3. Kant’s “main” argument in the Second Analogy of experience

Kant offers different formulations of the second analogy in the first and second edition of the *Critique of Pure Reason*. While in the first edition, the second analogy is referred to as the “Principle of Generation”, in the second edition, it is called more elaborately “Principle of temporal sequence according to the law of causality.” And while in the first edition, the second analogy states that “[e]verything that happens (begins to be) presupposes something which it follows in accordance with a rule” (A189), the second edition formulation says that “[a]ll alterations occur in accordance with the law of the connection of cause and effect” (B232). The second edition formulation is obviously intended to connect the argument of the second analogy more closely to that of the first analogy: in the first analogy, alteration is conceived of as alteration of a thing or substance, i.e. as change of the states, determinations or appearances of a thing. But both formulations can be said to amount to the same thing and may, moreover, be taken to be largely synonymous with the more informal formulation from the introduction, according to which every alteration or everything that happens has its cause (B3, A9/B13).

Commentators have distinguished no less than six different arguments that Kant provides in support of the second analogy.⁹ But all six arguments differ only slightly, and some commentators (including Allison 2004, pp. 249-252, and Watkins 2005, pp. 209-217) have attempted to reconstruct what they take to be Kant’s “essential” or “main” argument. Kant’s main argument turns on the problem of determining the conditions under which a subjective succession, i.e. a temporal succession of the perceptions of the states or determinations of a thing or substance (a synthesis of apprehension produced by the imagination), represents

⁹ Cf. e.g. Paton (1936, vol. 2, pp. 224-225).

the experience of an objective succession, i.e. a temporal succession of these states or determinations. This problem arises because a subjective succession is a necessary but not a sufficient condition of an experience of objective succession: the sequence of our perceptions is always temporally successive, no matter if we perceive coexisting states of a thing – as in the case of our perception of the parts of a house (cf. A190/B235, A192/B237-238) – or alterations (i.e. temporal successions of the states) of a thing – as in the case of our perception of a ship sailing downstream (A192/B237).

One might suggest that a subjective succession represents the experience of an objective succession of the determinations of a thing if these determinations change in time independently of what our perceptions of these determinations happen to be. But the problem with this suggestion is that according to Kant, a change of determinations that elapses independently of what our perceptions of these determinations happen to be, is a change of determinations that elapses in “time itself” (B210). Time itself might be thought of (with Leibniz) as a relational property or (with Newton) as an entity in which things-in-themselves are contained. As such, time itself cannot be perceived, and if it cannot be perceived, then we strictly speaking cannot know whether there is such a thing as a change of determinations that elapses independently of what our perceptions of these determinations happen to be. We therefore must not include this change of determinations among the conditions of representation of the experience of an objective succession by a subjective succession.

Another suggestion is that a subjective succession cannot represent the experience of an objective succession of these determinations unless these determinations are continuously generated by an active power. Kant clearly endorses this suggestion but also elaborates on the nature of the concept of an active power. For him, this concept cannot be empirical because we have never been able to identify an active power, and because there is no guarantee that we will ever be able to identify one. We stipulate that an objective succession is continuously generated by *some* causal power, and we might empirically investigate this objective succession in order to get some clues about this power. But we can never be sure to identify the causal power that the objective succession is really a manifestation of. Kant makes this point when referring to the second analogy as an “analogy”. He says that in philosophical contexts, an analogy is the identity “of two *qualitative* relations, where from three given members I can cognize and give *a priori* only the relation to a fourth member but not *this* fourth *member* itself, although I have a rule for seeking it in experience and a mark for discovering it there” (A179-180/B222). In the context of the second analogy, the analogy holds between the binary relation expressed by the category of causality (and its schema)

and the binary relation between an objective succession of the states of a thing and a (possibly unidentifiable) cause of that succession.

If the concept of a causal power is not an empirical concept, it might pass as a concept of a thing-in-itself. A causal power could be conceived of as a thing-in-itself if the objective succession of the determinations that it generates could be conceived of as a change of determinations that elapses independently of what our perceptions of these determinations happen to be. It has just been pointed out, however, that we cannot be sure whether there is such a thing as a change of determinations that elapses independently of what our perceptions of these determinations happen to be. We accordingly cannot rule out that there is no such thing as a thing-in-itself that continuously generates these determinations.

Considering the results of section 2, it is clear that the Kantian concept of a causal power is a pure and a priori concept. This concept is pure because it is not empirical, and it is a priori because it is a necessary condition of the possibility (or transcendental condition) of the experience of an objective succession of the determinations of a thing. Given this solution to the problem of determining the conditions under which a subjective succession represents an the experience of an objective succession, Kant's argument in support of the second analogy can be reconstructed as follows:

- (p1) Experience of objective succession, i.e. of a temporal succession of the states or determinations of a thing or substance, presupposes subjective succession, i.e. a temporal succession of perceptions of the states or determinations of a thing or substance.
- (p2) A subjective succession is a necessary but not sufficient condition of the experience of an objective succession.
- (p3) A subjective succession doesn't represent an experience of an objective succession of the determinations of a thing unless these determinations are conceived of as continuously generated by an active power.
- (p4) To conceive of the determinations of a thing as generated by an active power is to subsume the perceptions of these determinations under the schema of causality.
- (p5) A transcendental condition of the experience of an object is also a transcendental condition of the object of an experience.
- (c) The schema of causality is a transcendental condition of the experience of objective successions of the determinations of a thing.

The first premise results from Kant's definition of 'objective succession' or 'event', as it figures in the first analogy, and from his characterization of experience as "cognition through connected perceptions" (B161) or "synthetic unity of perception" (A183/B226). Premises (p2) – (p4) follow from his solution to the problem of determining the conditions under which a

subjective succession represents the experience of an objective succession. Premise (p5) rephrases the Kantian principle, according to which the “conditions of the *possibility of experience* in general are at the same time conditions of the *possibility of the objects of experience*” (A158/B197). And conclusion (c) can be taken to be synonymous with ‘every event has its cause’.¹⁰

It goes without saying that this argument is anything but a solid proof of the second analogy: realists will struggle with (p5) and with Kant’s rejection of the suggestion that a subjective succession represents the experience of an objective succession of the determinations of a thing if these determinations change in time independently of what our perceptions of these determinations happen to be. But the reconstruction of this argument represents an adequate reconstruction of Kant’s main line of reasoning in the Second Analogy and may therefore be referred to as Kant’s “main” argument. The reconstruction of this argument is also advantageous in that it avoids some of the Kantian vocabulary that seems to obscure what Kant is aiming at and thus has prompted misunderstandings and dissent. It has been pointed out, for instance, that Kant’s use of the term ‘necessary’ is ambiguous to the extent that it refers to a sort of irreversibility of a temporal sequence of perceptions and to a connection between an event and its cause. And it is well known that this ambiguity has led Strawson (1966, p. 137) to accuse Kant of a “*non-sequitur* of numbing grossness”.

Consider, by contrast, what Watkins (2005, p. 209-210) takes to be Kant’s “main” argument in the Second Analogy:

- (P1) “Apprehension of objects (the successive order of perceptions) is always successive.”
- (P2) “There is a distinction between the subjective order of perceptions and the successive states of an object such that no immediate inference from the former to the latter is possible.”
- (P3) “To have knowledge of objective succession, the object’s states must be subject to a rule that determines them as successive.”
- (P4) “Any rule that determines objective succession must include a relation of condition to conditioned, i.e. of the causal dependence of successive states on a cause.”
- (C) “To have knowledge of the successive states of an object, the object’s successive states must be dependent on a cause, that is, must stand under a causal rule.”

Watkins (2005, p. 210) is right when noting that (P1) “states an obvious fact”: this premise is easily approved by anyone who accepts the Kantian description of perceptions as temporal successions of representations of the states or determinations of a thing. (P2) is largely

¹⁰ Conclusion (c) can be taken to be synonymous with ‘every event has its cause’, because (c) follows from (p5), because for Kant, an event is an objective succession that is the object of an experience, and because for Kant, the schema of causality cannot be a transcendental condition unless the category of causality is a transcendental condition.

synonymous with (p2). And Watkins (2005, p. 210) provides textual evidence in support of (P3) and (P4), which could easily be amplified.

Substantial problems, however, relate to Watkins's interpretation of the relation of condition to conditioned (or of the dependence of events on a cause) mentioned in (P4) and (C). Watkins (2005, p. 200, 213-214) interprets this condition as holding between "something ontological or metaphysical" (as a condition) and "something epistemological" (as something conditioned): between "real grounds" and "knowledge of objective succession". And this interpretation is problematic in an at least twofold sense. The first problem is that Kant's concept of a real ground is a relict from his pre-critical philosophy (cf. Watkins 2005, pp. 162-170). A look at the first of the four passages quoted in section 2 indicates that the critical Kant does indeed speak of causes in terms of grounds. But the critical Kant doesn't speak of causes in terms of *real* grounds. It seems that according to the critical Kant, a ground (or causal power) may correspond to a pure and a priori concept, to an empirical concept, or to a problematic concept (or concept of a thing-in-itself). It also seems that the disjunction of these concepts is exhaustive in the sense that a ground necessarily corresponds to a problematic concept unless it corresponds to a category or to an empirical concept. Since Watkins appears to rule out that real grounds correspond to a category or empirical concept, he seems to be implying that they correspond to the concept of a thing-in-itself. But the problem with this implication is that Kant rejects knowledge of things-in-themselves as necessary conditions of experiences of objective successions.

The second problem with Watkins's interpretation is that it conflicts with important architectonic considerations, and that he hardly addresses these considerations. Among these considerations is the idea that the transcendental principles are synthetic and a priori judgments that say that a particular schema functions as a transcendental condition of experience. With respect to the second analogy, this idea implies that the statement that every event has its cause is synthetic and a priori. It is synthetic because "the concept of a cause indicates something different from the concept of something that happens" and "is not contained in the latter representation" (B13). And it is a priori because it connects both concepts "not only with greater generality than experience can provide, but also with the expression of necessity" (A9/B13).

It goes without saying that Kant's characterization of the second analogy as synthetic and a priori is anything but uncontroversial. But the following passage makes it clear that according to Watkins's interpretation, the second analogy represents an analytic statement: "If the pre-Critical Kant consistently held [...] that real grounds are responsible for positing determinations and the Critical Kant is investigating in the Second Analogy how temporal determinations are possible, then it appears that in the Second Analogy Kant is simply

looking for real grounds of the temporal determinations of objects. [...] But the real ground of the determination of the state or feature of an object is just what a cause is. Accordingly, it is simply an analytic truth that determining the temporal states of objects requires causality” (Watkins 2005, pp. 213-214). If Watkins interprets the second analogy as an analytic statement, he should at least address the Kantian characterization of the second analogy as synthetic and a priori.

A tentative defense of this characterization might, moreover, run roughly as follows. The concept of a cause is not contained in the concept of an event because both concepts are concepts of things characterized by predicative incompleteness. A thing is characterized by predicative incompleteness if it isn't characterized by predicative completeness, and a thing is characterized by predicative completeness if of every pair of opposed predicates, exactly one of them applies to it (cf. A573/B601).¹¹ Since the concepts of cause and effect are concepts of things characterized by predicative incompleteness, it is possible to think of causes that fail to generate their effects, and to think of effects that fail to be generated by their causes. The second analogy nonetheless connects both concepts “with the expression of necessity” because our perception of an objective succession necessitates us to synthetically connect this perception to the pure and a priori concept of a causal power that manifests itself in that succession.

4. Kant on laws and fundamental powers

Numerous passages in the text of the Second Analogy seem to suggest that, in the Second Analogy, Kant not only aims to show that all events fall under the category (and schema) of causality but also that every event falls under a particular causal law. One of these passages speaks of a rule, in accordance with which an occurrence “always and necessarily” follows (cf. A193/B238). Another states that something “which follows or happens must succeed that which was contained in the previous state in accordance with a general rule” (A200/B245). Accordingly, the question arises whether Kant can and wants to show in the Second Analogy that every event falls under a particular causal law. At least three accounts of Kant's argument in the Second Analogy have been proposed to answer this question in the affirmative. And one of these accounts – the account defended by Watkins – is especially relevant in the context of an interpretation of causes as powers.¹²

Watkins defends his affirmative answer by alluding to Kant's use of the term ‘ground’. It has just been noted that Watkins is very interested in the pre-critical meaning of this term, but for

¹¹ According to Kant, only things-in-themselves are characterized by predicative completeness (cf. A576/B604).

¹² The other two accounts are those of Guyer (1987) and Friedman (1992). For apt criticisms of both accounts cf. Allison (2004, pp. 256-9).

present purposes, it may suffice to appreciate the meaning that Kant attaches to it when saying that “according to the principle of causality actions are always the primary ground of all change of appearances” (A205/B250). According to Watkins (2005, p. 287), Kant argues in the Second Analogy “that change is to be explained in terms of grounds. Yet since the ground that causes change cannot itself be changing at the same time – at least not if one is to avoid an infinite regress – change presupposes an unchanging ground and this might be thought adequate to support causal laws, since the grounds cannot change in the future and thus must, it would seem, bring about the same effects as before.” Watkins (2005, p. 287) concedes that there is “a significant weakness in such an argument. For the argument of the Second Analogy, so understood, establishes only that a ground cannot change *while it is determining successive states in an object*, and not that a change cannot change *at all*, which is just what would be required in order to establish causal laws.” But Watkins (2005, p. 289) also defends the unchangeability of grounds by rejecting the alternative: “if one accepted changing grounds, then it would force one to undertake an impossible task, namely explaining why grounds changed in precisely this way at precisely this time, and whatever explanation one gave, it would, so it seems, have to be in terms of further grounds that either changed or did not, in which case no real improvement would have been made.”

There are at least two points, however, that have to be made in response to Watkins’s answer. The first point is that for Kant (as a transcendental philosopher), there is no need to explain “why grounds changed in precisely this way at precisely this time”. Philosophically (and not scientifically) speaking, it is even impossible to give such an explanation because there is, strictly speaking, no guarantee that we can ever identify the causes of objective successions of the states of a thing. We know that an objective succession is continuously generated by *some* causal power, and we might empirically investigate this objective succession in order to get some clues about this power. But we can never be sure to identify the causal power that the objective succession is really a manifestation of. It has been mentioned above (cf. section 3) that Kant makes this point when referring to the second analogy as an “analogy”.¹³

The second point that has to be made in response to Watkins’s answer is that it conflicts with a passage from the first part of the Appendix to the Transcendental Dialectic – a passage that is relatively neglected and, unfortunately, even neglected by Watkins. In this passage, Kant makes it clear that “[a]mong the different kinds of unity according to concepts of the understanding belongs the causality of a substance, which is called ‘power.’ At first glance the various appearances of one and the same substance show such diversity that one must

¹³ Allison (2004, p. 258) makes a similar point against Friedman’s account of Kant’s argument in the Second Analogy.

assume almost as many powers as there are effects” (A648/B676). While Watkins claims that “grounds cannot change in the future and thus must [...] bring about the same effects as before,” Kant points out that there appear to be as many powers, as there are manifestations of these powers, and that it is accordingly unclear whether there are unchanging grounds that could give rise to causal laws.

Kant further holds that reason can be used hypothetically to combine various powers to “fundamental powers”: “The idea of a *fundamental power* – though logic does not at all ascertain whether there is such a thing – is at least the problem set by a systematic representation of the manifoldness of powers. The logical principle of reason demands this unity as far as it is possible to bring it about” (A649/B677). A fundamental power is comparative if it gives rise to a particular causal law: “the more appearances of this power and that power are found to be identical, the more probable it becomes that they are nothing but various expressions of one and the same power, which can be called (comparatively) their *fundamental power*. One proceeds in just the same way with the rest of the powers” (A649/B677). According to Kant, there is also a causal power that is absolutely fundamental: “These comparatively fundamental powers must once again be compared with one another, so as to discover their unanimity and thereby bring them close to a single radical, i.e., absolutely fundamental, power” (A649/B677).

It is reason in its hypothetical use, however, that combines the various powers to fundamental powers, and for Kant the hypothetical use of reason is nothing but its inductive use. That by reason’s “hypothetical use” Kant simply means its “inductive use” becomes clear when he contrasts reason’s hypothetical use with its “apodictic use”: while the latter corresponds to the use of reason in deductive inference, where “the universal is *in itself certain* and given, and only judgment is required for subsuming” particulars under the universal, the former relates to the use of reason in inductive inference, where the particular is certain and “the universal is assumed only *problematically*” (A646/B674).¹⁴

Of the hypothetical use of reason Kant further maintains that it is not constitutive of any universals, and that its task is to provide only an analogue to the certainty of the universal assumed in deductive inference: “The hypothetical use of reason, on the basis of ideas as problematic concepts, is not properly *constitutive*, that is, not such that if one judges in all strictness the truth of the universal rule assumed as a hypothesis thereby follows; for how is one to know all possible consequences, which would prove the universality of the assumed principle if they followed from it? Rather, this use of reason is only regulative, bringing unity into particular cognitions as far as possible and thereby *approximating* the rule to

¹⁴ Allison (2004, p. 428) similarly interprets reason’s hypothetical use as its inductive use.

universality" (A647/B675). If "approximating" is to be understood as providing an analogue to the certainty of the universal assumed in deductive inference, then the question is what enables reason to provide such an analogue. Kant's answer to this question turns on the principle of systematicity: "one principle", according to which reason "quite uniquely prescribes and seeks to bring about [...] the *systematic* in cognition" (A645/B673). While Kant speaks of only one principle of systematicity, he also holds that this one principle expresses itself in three logical principles: in the principles of homogeneity, specification, and affinity or continuity. While the principle of homogeneity is the "principle of *sameness of kind* in the manifold under higher genera", the principle of specification is "the principle of the *variety* of what is same in kind under lower species." Finally, the principle of affinity or continuity "offers a continuous transition from every species to every other through a graduated increase of varieties" (A657-658/B685-686).

The principles of homogeneity, specification, and affinity or continuity nicely apply to Kant's arrangement of causal powers. He applies the principle of homogeneity when descending to powers that are comparatively fundamental and constitutive of particular causal laws, and further down to the one causal power that is absolutely fundamental. He applies the principle of specification when ascending toward comparatively fundamental powers and further up toward the highest possible diversity of causal powers. He, finally, applies the principle of affinity when continuously moving up and down. But the point of the applicability of these principles is that the homogeneity of causal powers (or unchangeability of grounds) is merely problematic and not essential, and that it therefore cannot give rise to particular causal laws that are metaphysically necessary.

Kant draws an important distinction between powers that are only comparatively fundamental and the one power that is absolutely fundamental. Like comparative fundamental powers, the absolutely fundamental power is a "unity of reason" that is "merely hypothetical": "[T]his unity of reason is merely hypothetical. One asserts not that such a power must in fact be found, but rather that one must seek it for the benefit of reason, namely for setting up certain principles for the many rules with which experience may furnish us, and that where it can be done, one must in such a way bring systematic unity into cognition" (A649-650/B677-678). Unlike all comparatively fundamental powers, however, the absolutely fundamental power is not only a merely hypothetical unity of reason. Its homogeneity is also objectively real in the sense that it corresponds to the category of causality, and that the argument in favor of the second analogy proves that this category is a transcendental condition of empirical objects: "[I]f one attends to the transcendental use of the understanding, it is evident that this idea of a fundamental power in general does not function merely as a problem for hypothetical use,

but pretends to objective reality, so that the systematic unity of a substance's many powers are postulated and an apodictic principle of reason is erected" (A650/B678).¹⁵

Since the category of causality (and its corresponding schema) is a transcendental condition of empirical objects, the absolutely fundamental power may be said to give rise to a law in the sense of an "apodictic principle of reason" or transcendental principle (viz. the second analogy of experience). The comparatively fundamental powers also give rise to laws, i.e. particular causal laws, but these particular causal laws stand under the transcendental principles (cf. A650/B678) and differ from the latter precisely in that they quite possibly do not correspond to any homogeneity that is objectively real.

Kant introduces a further distinction in the *Metaphysical Foundations of Natural Science*. He says that the second law of mechanics ("Every change in matter has an external cause") stands above particular causal laws but under the second analogy of experience. Both the second analogy and the second law of mechanics belong to the metaphysics of nature. There is, however, a "*transcendental* part of the metaphysics of nature" and "a *special* metaphysical natural science." Both "contain solely principles that are not empirical." But while the former treats "the laws that make possible the concept of a nature in general, even without relation to any determinate object of experience, and thus undetermined with respect to the nature of this or that thing in the sensible world," the latter concerns "itself with a particular nature of this or that kind of thing, for which an empirical concept is given, but still in such a manner that, outside of what lies in this concept, no other empirical principle is used for its cognition" (Kant 2004 [1786], pp. 5-6). While particular causal laws are "contingent laws" (just like the empirical laws of e.g. 18th century chemistry), Kant's second law of mechanics is necessary in the sense of "apodictically certain" (just like the second analogy). But it "derives" its necessity (or apodictic certainty) from the necessity of the second analogy (cf. Kant 2004 [1786], pp. 4-5).

These passages from the Appendix to the Transcendental Dialectic and the *Metaphysical Foundations of Science* make it clear that for Kant, there is no reason to assume that "grounds cannot change in the future and thus must [...] bring about the same effects as before." If he has no reason to make that assumption, it is doubtful whether he attempts to show in the Second Analogy that every event falls under a causal law. But if this is not what

¹⁵ Kant's claim that the absolutely fundamental power is not only a merely hypothetical unity of reason but also a unity with objectively real homogeneity might prompt one to raise a concern that has been expressed time and again (and for the first time, it seems, by Kemp Smith, 1962, pp. 543-552): a concern about the possible inconsistency of the hypothetical and the transcendental use of reason. Both uses of reason, however, are not inconsistent – at least not with respect to the unity of a fundamental power. They simply represent ways of looking at that unity from different perspectives: from the perspective of reason's interest to render our cognition systematic in the case of reason's hypothetical use and from the perspective of the conditions of (the objects of) our possible experience in the case of reason's transcendental use.

he attempts to show, then the question arises what he has in mind when speaking of a rule, in accordance with which an occurrence “always and necessarily” follows, or when saying that something “which follows or happens must succeed that which was contained in the previous state in accordance with a general rule.” When trying to answer this question, one of course, must not rule out that Kant can tell a convincing story that somehow reconciles this language with the inductive account of causal laws given in the Appendix to the Transcendental Dialectic. The text of the Second Analogy is still little understood, and it is possible that a convincing story hides, for instance, in the later, rather neglected, parts of the Second Analogy.

But one must also reckon with the possibility that Kant’s formulations are simply misleading. What they state is that an event follows something or is connected to something in accordance with a general or absolutely universal rule. And this statement prompts many to misunderstand the rule as a causal law. What Kant might mean, however, is that it is an absolutely universal rule that states that an event follows something, that an event is connected to something, or that an event has its cause. And this absolutely universal rule is nothing but the second analogy of experience. If what Kant means is that it is an absolutely universal rule that states that an event is connected to a cause, it is not self-evident that he should attempt to demonstrate that every event falls under a causal law.

5. Kant and contemporary causal powers ontology

Interpreting the Kantian concept of causality in terms of causal powers locates the Kantian position on causality in close proximity to contemporary causal powers ontology. Four of the central tenets of this ontology state that (i) the necessity of the connection between powers or dispositions and their manifestations is *de re*, rather than *de dicto*, that (ii) some properties are dispositional, that (iii) some properties have dispositional essences, and that a property *P* has a dispositional essence if and only if that essence is wholly constituted by a causal power and *P* invariably endows its instances with the same dispositions, and that (iv) causal laws are universal descriptions of dispositional essences, and that these descriptions are metaphysically necessary because their truth is guaranteed by the dispositional essences of properties in all possible worlds in which these properties exist.

These four tenets are most explicitly endorsed by Molnar who claims that (i) “[e]ach power has one manifestation,” and that “[m]anifestations are [...] necessarily linked to the properties that they are manifestations of” (Molnar 2003, p. 195), that (ii) “there are properties that are non-powers” (Molnar 2003, p. 58), that (iii) causation is essentially “generative behavior of objects that is governed by their properties” and “one thing and not a heterogenous conjunction of many different things” (Molnar 2003, p. 187-188), and that (iv) laws of nature

are “descriptions of the grounds for necessary connections among existents” (Molnar 2003, p. 199). It’s a bit hard to say whether the conjunction of precisely these four tenets is endorsed by anyone else. Philosophers tend to be rather modest these days and usually shy away from defending whole ontologies. But it is clear that Harré et al. (1975, p. 5) subscribe to the first tenet when deploying “a concept of natural necessity that [...] characterizes the relation that holds between the nature of a particular and the occasion for the exercise of any of its powers.” It is also clear that Ellis et al. endorse tenets (ii) – (iv) when saying that (ii) they don’t want to claim that “dispositional properties are the ontological basis of all properties” (Ellis et al. 1994, p. 39),¹⁶ that (iii) natural dispositions are “simply the real essences of the natural kinds of processes they describe” (Ellis et al. 1994, p. 37), and that (iv) causal powers are the essential properties of natural kinds, that in order to have these properties, natural kinds must be disposed to behave as they do, and that the “laws governing their behavior must therefore be necessary” (Ellis et al. 1994, p. 43).

The textual analysis in section 4 of the passage from the Appendix to the Transcendental Dialectic has made it clear that Kant rejects tenets (iii) and (iv). Watkins ascribes to Kant a variant of tenet (iii) when interpreting causal powers as real grounds that don’t change. But Kant holds that a causal power or disposition doesn’t need to be the same in each of its instances. His position is in fact similar to that of Cartwright who says that causal powers (or ‘capacities’, as she calls them) can have different manifestations in different circumstances: capacities “are not restricted to any single kind of manifestation. Objects with a given capacity can behave very differently in different circumstances” (Cartwright 1999, p. 59). Watkins also ascribes to Kant a variant of tenet (iv) when claiming that as unchanging ground, a causal power must bring about the same effects, and that a causal power that brings about the same effects gives rise to causal laws. But if Kant maintains that a causal power doesn’t need to be the same in each of its instances, he also maintains that a causal power doesn’t need to give rise to a causal law. The textual analysis in section 4 of the passage from the Appendix to the Transcendental Dialectic further indicates that for Kant, it is reason in its hypothetical (i.e. inductive) use that establishes causal laws.

While Kant rejects tenets (iii) and (iv), he certainly endorses specific variants of tenets (i) and (ii): his endorsement of (i) follows from his characterization of the second analogy as synthetic and a priori, and his endorsement of (ii) from his main argument in favor of the second analogy and his metaphysical deduction of the categories. The Kantian variants of tenets (i) and (ii) are particularly interesting because unlike many of the variants endorsed by contemporary powers theorists, they do not seem to be open to the sort of objections that

¹⁶ The claim that they don’t want to accept is made by Popper (1935/2002: 444) who maintains that “*all* universals are dispositional.” Theorists who follow Popper by defending this claim are the so-called dispositional monists.

Humeans raise to tenets (i) and (ii). One of these objections states that the connection between a disposition (or power) and its manifestation cannot be necessary unless it holds between a surefire disposition (a disposition that a thing will manifest whenever the appropriate stimulus conditions are present) and its manifestation, and that the necessity in question is conceptual (*de dicto*) and not natural (*de re*) if it holds between a sure-fire disposition and its manifestation (cf. Mackie 1974, chapter 8). While the characterization that Harré et al. (1975, p. 132), for instance, give of their notion of natural necessity seems to be open to this objection,¹⁷ Kant can be seen as successfully rejecting it.

In order to appreciate the Kantian response to this objection, note that there is a difference between the necessity of the connection between a causal power and its manifestation and the necessity of the second analogy of experience, i.e. the necessity of the judgment that the category of causality (or its corresponding schema) is a transcendental condition of events, i.e. of objective successions of the states of a thing (or all alterations of a thing). Kant in fact nowhere denies that the necessity of the connection between a causal power and its manifestation holds only in case this causal power is sure-fire, and that the necessity of the connection between a causal power and its manifestation is only conceptual and not natural if this causal power is surefire. A surefire causal power, however, is one that a thing will manifest whenever the appropriate stimulus conditions are present, and the appropriate stimulus conditions that need to be present in order for a thing to manifest a surefire causal power are unlimited in number. For Kant, a surefire causal power is therefore likely to represent a thing in itself: a thing that is characterized by predicative completeness, just as a surefire causal power is characterized by a completeness of stimulus conditions. And a thing in itself, as Kant has it, cannot be the object of empirical judgments.

The necessity of the second analogy of experience, however, is of an altogether different kind. The second analogy relates to the pure and a priori concept of a thing that is characterized by predicative incompleteness. As characterized by predicative incompleteness, it is also characterized by an incompleteness of stimulus conditions. As long as the stimulus conditions of a causal power are thought to be incomplete, there is no obstacle to thinking that the connection between this power and its manifestation fails to come off. But the second analogy is still necessary in an important sense. It is necessary in the non-conceptual and epistemic sense that our perception of an objective succession

¹⁷ Harré et al. (1975, p. 132) characterize natural necessity as follows: “the assertion that a particular has a certain nature, and that the occasion for the manifestation of its power has occurred, together with the denial that the power has been manifested, is inconsistent and this reflects the natural necessity that obtains between the nature of a particular and the occasion for exercising its power, on the one hand, and the manifestation of that power, on the other.” The inconsistency in question suggests that the necessity that Harré et al. believe holds between the nature of a particular and the occasion for exercising its power is conceptual and not *de re*.

necessitates us to synthetically connect this perception to the concept of a causal power that manifests itself in that succession.

Another Humean objection – an objection to tenet (ii) – states that dispositional properties do not exist at all, or that dispositional properties, if there are any, are categorically based. Armstrong (1997, p. 79), for instance, argues that dispositions are Meinongian, and that Meinongianism is a metaphysical position that is to be rejected for its endorsement of an unduly generous ontology that also includes non-existent entities. Why Armstrong argues that dispositions are Meinongian becomes clear when a counterfactual analysis of dispositions is considered. A somewhat simplified version of the analysis proposed by Lewis (1997, p. 157) states that something *x* is disposed to give response *r* to stimulus *s* if and only if, for some intrinsic property *B* that *x* has for a sufficient time, *s* and *B* would jointly cause *x*'s giving response *r*, if *x* were to undergo *s*. The disposition of *x* to give response *r* can be regarded as Meinongian to the extent that this disposition essentially relates to an event that is only counterfactual if *r* doesn't ensue.

One might, alternatively, concede that dispositions exist in a strict (i.e. non-Meinongian) sense, and argue that they are categorically based. That they are categorically based means that they have a categorical property as their causal basis. Following Lewis's counterfactual analysis, one may say that the causal basis for *x*'s disposition to give response *r* is *x*'s intrinsic property *B* that would combine with stimulus *s* to cause *x*'s giving response *r* if *x* were to undergo *s*. This property *B* is categorical if it represents e.g. *x*'s microstructure. That dispositions are categorically based can also be taken to mean that they supervene on categorical (or "perfectly natural intrinsic") properties in the sense of Lewis's Humean supervenience thesis.

How does Kant respond to the objections of Meinongianism and the possible categorical base of dispositions? His response to the objection of the possible categorical base of dispositions derives from his metaphysical deduction of the categories. It simply states that causal powers cannot be categorically based because the category of causality cannot be reduced to any of the other categories, and in particular not to the category of substance. A causal power, that is, cannot be turned into a substance to which we assign properties in a categorical judgment that we can justify by empirical observation.¹⁸ Kant's metaphysical deduction, to be sure, is anything but uncontroversial, and a rejection of his response to the

¹⁸ To avoid possible misunderstandings, note that in Kantian terms, 'being categorically based' means as much as 'being a substance to which we assign properties in a categorical judgment that we can justify by empirical observation', and that the meaning of 'being categorically based' is not to be confused with the meaning of 'being the object of knowledge' (where knowledge is to be understood along Kantian lines as subsumption of the manifold of an intuition under pure and a priori concepts, i.e. categories (!), in a judgment).

problem of the possible categorical base of dispositions could possibly rely on a criticism of his metaphysical deduction. But there have also been remarkable attempts to defend this deduction.¹⁹

Kant's response to the objection of Meinongianism, by contrast, is his second analogy of experience: the statement that the pure and a priori concept of causal power is a transcendental condition of (our knowledge) of events. It has been noted above (cf. section 3) that Kant's main argument in support of this statement doesn't amount to a solid proof. Humeans will struggle in particular with Kant's rejection of the suggestion that a subjective succession represents the experience of an objective succession of the determinations of a thing if these determinations change in time independently of what our perceptions of these determinations happen to be. But what distinguishes Kant from many of the proponents of the causal powers ontology is that he responds to the objection of Meinongianism. While e.g. Molnar tends to ignore this objection,²⁰ Kant can be read as trying to reject it by providing a sophisticated argument that some Humeans might eventually find convincing.

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References:

- Allison, H. E. (2004). *Kant's Transcendental Idealism* (2nd ed.). New Haven: Yale University Press.
- Armstrong, D. M. (1997). *A World of States of Affairs*. Cambridge: CUP.
- Carrier, M. (2003). How to tell causes from effects: Kant's causal theory of time and modern approaches. *Studies in History and Philosophy of Science*, 34, 59-71.
- Cartwright, N. (1999). *The Dappled World*. Cambridge: CUP.
- Ellis, B. & Lierse, C. (1994). Dispositional Essentialism. *Australasian Journal of Philosophy*, 72, 27-45.
- Friedman, M. (1992). Kant on Causal Laws and the Foundations of Natural Science. In P. Guyer (Ed.), *The Cambridge Companion to Kant* (pp. 161-197). Cambridge: CUP.
- Guyer, P. (1987). *Kant and the Claims of Knowledge*. Cambridge: CUP.

¹⁹ Criticism of Kant's metaphysical deduction is usually of two types: it concerns the completeness of the table of the logical functions of the understanding from which the table of the categories is supposedly derived or relates to the derivation of the table of categories from the table of logical functions. Criticism of the first type goes back to the days of Hegel, while criticism of the second type is often expressed by theorists who like e.g. Strawson (1966, pp. 81-82) emphasize the merits of modern truth-functional and predicate logic. For a defense of Kant's metaphysical deduction cf. e.g. Wolff (1995) and Allison (2004, pp. 135-146, 152-156).

²⁰ Molnar (2003, ch. 5) deals with the actuality of powers only briefly. He thinks, as Mumford puts it in the introduction, "it absurd to defend in depth something so obvious" (cf. Molnar 2003, p. 9).

- Harré, R. & Madden, E. H. (1975). *Causal Powers: A Theory of Natural Necessity*. Oxford: Blackwill.
- Hume, D. (2009). *A Treatise of Human Nature* (D. F. Norton & M. J. Norton, Eds.). Oxford: OUP. (First published 1739)
- Hume, D. (2010). *Enquiry Concerning Human Understanding* (T. L. Beauchamp, Ed.). Oxford: OUP. (First published 1748)
- Kant, I. (1998). *Critique of Pure Reason* (P. Guyer & A. W. Wood, Transl./Eds.). Cambridge: CUP (First published 1781a/1787b)
- Kant, I. (2004). *Prolegomena to Any Future Metaphysics* (G. Hatfield, Transl./Ed.). Cambridge: CUP. (First Published 1783)
- Kant, I. (2004). *Metaphysical Foundations of Natural Science* (M. Friedman, Transl./Ed.). Cambridge: CUP. (First Published 1786)
- Kemp Smith, N. (1962). *A Commentary to Kant's "Critique of Pure Reason"* (2nd ed.). New York: Humanities Press.
- Lewis, D. (1986). *Philosophical Papers*, vol. 2. Oxford: OUP.
- Lewis, D. (1997). Finkish Dispositions. *The Philosophical Quarterly*, 47, pp. 143-158.
- Longueness, B. (1998). *Kant and the Capacity to Judge*. Princeton: PUP.
- Mackie, J. L. (1974). *The Cement of the Universe*. Oxford: OUP.
- Melnick, A. (2006). The Second Analogy. In G. Bird (Ed.), *A Companion to Kant* (pp. 169-181). Oxford: Blackwell.
- Molnar, G. (2003). *Powers: A Study in Metaphysics*. Oxford: OUP.
- Paton, H. J. (1936). *Kant's Metaphysic of Experience*, 2 vols. New York: Macmillan.
- Popper, K. (2002). *The Logic of Scientific Discovery*. London/New York: Routledge. (First Published 1935)
- Strawson, P. F. (1966). *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason*. London: Methuen.
- Watkins, E. (2005). *Kant and the Metaphysics of Causality*. Cambridge: CUP.
- Wolff, M. (1995). *Die Vollständigkeit der kantischen Urteilstafel*. Frankfurt a. M.: Klostermann.