

Epistemic normativity in Kant's "Second Analogy"

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Abstract

In the "Second Analogy," Kant argues that, unless mental contents involve the concept of causation, they cannot represent an objective temporal sequence. According to Kant, deploying the concept of causation renders a certain temporal ordering of representations necessary, thus enabling objective representational purport. One exegetical question that remains controversial is this: how, and in what sense, does deploying the concept of cause render a certain ordering of representations *necessary*? I argue that this necessitation is a matter of epistemic normativity: with certain causal presuppositions in place, the individual is obliged to make a judgment with certain temporal contents, on pain of irrationality. To make this normatively obligatory judgment, the subject must place her perceptual representations in a certain order. This interpretation fits Kant's text, his argumentative aims, and his broader views about causal inference, better than rival interpretations can. This result has important consequences for the ongoing debate over the role of normativity in Kant's philosophy of mind.

1 | INTRODUCTION

This article has two aims: one narrow, one broad. The narrow aim is to resolve an interpretative dispute about Kant's "Second Analogy." The "Second Analogy" gives an account of how we can perceive temporal sequences. However, disagreement remains over the details of the mental operations required for perception to have objective temporal content. In particular, it remains controversial how, according to Kant, deploying the concept of causation renders a certain subjective "order of perceptions" "necessary" (A193/B238) and with what kind of modality this subjective

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order of perceptions becomes necessary. Building on existing scholarship, I argue that Kant's account turns on the inferential role of the concept of causation. Moving beyond existing scholarship, I argue that this inferential necessity applies to the subdoxastic level of perceptions as well as to judgments and that the modality in question is that of epistemic normativity.

This narrow exegetical conclusion connects with a broader debate about the role of normative notions in Kant's philosophy of mind. Recent decades have seen numerous attempts to interpret the project of the *Critique of Pure Reason* as fundamentally normative in character. Allison (2004) argues that it "involves a radical reconfiguration of epistemic norms" and "serves as the epistemological counterpart of the shift from heteronomy to autonomy, which is [...] the essence of Kant's 'revolution' in ethics" (p. xvi). O'Neill (1989) holds that, for Kant, a "critique of pure reason" is a "(quasi-)juridical or political task" (p. 9). McDowell (1994) reads Kant as attributing a normative status to all contentful mental representations, thereby giving a promising account of the relation between mind and world. More recently, Pollok (2017) has argued that the central claim of Kant's theoretical philosophy is that "synthetic judgments a priori must be acknowledged as the fundamental norms for our mathematical and empirical cognitions" (p. 2). These normative interpretations of Kant's project have primarily been advanced on the basis of general considerations about *KrV*. Allison and O'Neill highlight broad structural similarities between Kant's project in *KrV* and his practical philosophy. O'Neill also cites Kant's general methodological statements in the motto and prefaces to *KrV* and in its "Doctrine of Method" as well as his obscure doctrine that practical reason has "primacy" over theoretical reason (*KpV* 5:119). O'Neill, McDowell, and others also point to Kant's extensive use of juridical metaphors both in characterizing his own project and in distinguishing it from the non-normative systems of Locke and Leibniz; and McDowell makes much of an alleged comparison between the "spontaneity" of the understanding and the freedom of practical reason. Pollok's (2017) interpretation is also based on a normative reading of spontaneity (p. 67) and on interpreting Kant's remarks about the "transcendental unity of apperception" as a claim about the normative "imputability" of judgments (p. 64).

The problem with relying on such "big picture" consideration is that they leave indeterminate the scope of normativity in Kant's project. Illustrating this dramatically, these normative interpretations differ widely over the breadth of normative import they find in *KrV*. O'Neill (1989) holds that only Kant's regulative principles and "maxims of judgment" are normative in character (p. 19), a position also endorsed by Mudd (2016, p. 12). Allison and Pollok hold that all of Kant's principles—the regulative principles of reason, the principles of the understanding, and even the principles of mathematics and science—are normative. Meanwhile, McDowell reads Kant as assigning a normative status to every intentional state, including intuitions. (Pollok [2017] appears also to hold that the "determination of sensibility" is subject to normative constraint [pp. 19, 224], but that this activity is inseparable from judgment [pp. 19, 226].) To move forward, such approaches must be augmented with detail-oriented, bottom up investigations, which examine the viability of normative readings of particular aspects of Kant's philosophy.

Adding to the urgency of adopting a detail-oriented approach, Tolley (2006) has shown that there are tight limitations on the kinds of normative reading that are tenable. Focusing on Kant's logic, Tolley argues that the mind must be capable of deviating from a set of laws, if those laws are to serve as normative imperatives for the mind's operations. The devil is likely to lie in the detail of any normative reading, so proponents of normative interpretations must carefully specify the type of normativity in question and the relation between the normative standards and the actual operations of the mind. Existing work that exemplifies a detail-oriented approach includes O'Neill's (1989) discussion of the "maxims of common human understanding" (pp. 25f.), Ginsborg's (1997) reading of Kant on empirical concept formation, Mudd's (2016) account of the normativity of the regulative principles, and Tolley's (2006), Lu-Adler's (2017), and Leech's (2017) discussions of normativity in Kant's logic. The latter four are especially clear in detailing the relation between normative rules and mental activities. The present article advances the debate over normativity in Kant's philosophy of mind in the same way: by offering a bottom-up account of the role of normativity in the mental activities discussed in the "Second Analogy." My exegetical conclusion has important consequences for identifying the range of mental operations that, according to Kant, are subject to normative constraint. It shows that the mental operations responsible for "empirical cognition" must be subject to normative standards and that this includes certain activities of the "power of the imagination," by means of which a temporal

structure is imposed on sensible material (thus providing some support for views like McDowell's and Pollok's, according to which the "determination of sensibility" is subject to normative standards).

My argument runs as follows. Section 2 sketches the argument of the "Second Analogy" and locates the factor requiring further elucidation: the necessitation of a subjective ordering of perceptions. Section 3 presents the two major routes to explaining this notion—*causal* and *conceptual* accounts—and presents grounds for pursuing the latter. Section 4 provides compelling textual evidence for the existing view that it is the inferential role of the concept of cause that equips it for enabling objective temporal representation and moves beyond existing scholarship to explain how this could impose necessity on a subjective ordering at the pre-judgmental level of perceptions. I argue that, on Kant's account, a subject who makes the presuppositions that Xs cause ABs¹ and that X obtains is thereby "inferentially necessitated" to draw the conclusion that event AB occurs and that making the empirical judgment that AB occurs requires an act of synthesis in which the subject places her perceptions in a certain order. Section 5 clarifies the notion of "inferential necessitation." The text of the "Second Analogy" and Kant's characterizations of logical laws strongly suggest that causal presuppositions make it *normatively* necessary for the subject to judge that AB occurs and hence to place her perceptions in a certain order. In contemporary parlance, the necessity of the "order of perceptions" is a matter of epistemic normativity. Section 6 deals with an objection to the claim that inference could be subject to normative standards. Section 7 concludes by tracing the consequences of the article's findings.

2 | THE ARGUMENT OF THE "SECOND ANALOGY"

The "Second Analogy" examines the preconditions for representing objective temporal sequence. Let's illustrate the problem with an example: Jones watches his beloved snowman melt. For this to happen, Jones must have a mental representation with three features: (a) it must represent the initial state, that is, the snowman standing tall; (b) it must represent the subsequent state, that is, the melted snowman; and (c) it must represent the initial state as preceding the subsequent state. The problem is to explain how a mental state could represent (c), that is, the objective temporal relation between the two states.

Kant's discussion begins with a negative point: representation of objective temporal relations cannot be achieved simply by the fact that the representations of the two states occur successively in the mind. Although Jones perceives the snowman standing tall at t_0 and perceives the melted snowman at t_1 , this mere successiveness is insufficient for the representation of objective temporal sequence, because successiveness is ubiquitous: "[t]he apprehension of the manifold of appearance is always successive" (A189/B234).² Perceptual contents occur sequentially in the mind even when they represent coexistent, enduring features, as when one successively sees the different parts of a large house (A190/B235, A192f./B237f.). Since perceptions are always successive, even when the states perceived in fact coexist, successiveness of perceptions cannot have the semantic significance of denoting objective succession, as opposed to coexistence.³ Kant emphasizes that it is the "arbitrariness" of the subjective sequence that renders it insufficient to carry objective representational purport: "The subjective sequence [...] alone proves nothing about the connection of the manifold in the object, because it is entirely arbitrary." (A193/B238) This arbitrariness results from the fact that, according to Kant, temporal relations among perceptual contents are introduced by the faculty of imagination, which is capable of placing them in any order:

Connection [e.g. of "two perceptions in time"] is not the work of mere sense and intuition, but is here rather the product of a synthetic faculty of the imagination, which determines inner sense with regard to temporal relations. This [i.e. the imagination] [...] can combine the two states in question in two different ways, so that either one or the other precedes in time. (B233, cf. A201/B246)

To illustrate, let's return to Jones. At t_0 , Jones has a perception of the snowman standing tall (A) and at t_1 of the melted snowman (B). A necessary condition of Jones's representing the event of the snowman melting is that, while seeing the melted snowman, he is also conscious that previously the snowman was standing tall. This would, according

to Kant, require Jones's imagination to reproduce the perceptual content A, placing it before perception B in Jones's inner sense. Yet the imagination has the power to freely combine sensory material. At t_1 , when it is in possession of all the relevant sensory material, the imagination can thus produce either subjective ordering—A then B, or B then A—with equal ease. Unless something removes this arbitrariness of subjective order, the subjective order cannot have the semantic significance of denoting the objective order in which states succeed each other.

Kant's positive account is that when the subjective order of perceptions is a necessary order, it can have the significance of denoting an objective temporal relation. Under certain conditions, the subjective order is irreversible—not arbitrary but necessary. This enables the perceptual representation of objective sequence. Cases in which we represent events as happening are distinguished by the fact that there is only one order in which the perceptual contents can be arranged:

If in the case of an appearance that contains a happening [i.e. an event] I call the preceding state of perception A and the following one B, then B can only follow A in apprehension, but the perception A cannot follow but only precede B. (A192/B237)

Kant illustrates this with the example of "a ship driven downstream" (A192/B237). In such cases, the subjective order is "determined," "bound down," or rendered "necessary," so that we are "necessitate [d] [...] to observe this order of the perceptions rather than another" (A196/B242; cf. A193/B238, A198/B243). This makes possible the representation of objective sequence. To enable objective temporal representation, something must render the subjective order of perceptions necessary.

This brings us to our central exegetical questions. What does it take for a subjective order of perceptions to be rendered necessary? What kind of mental operations are required, and how do they impose necessity on the subjective order? Furthermore, what kind of necessity is thereby imposed? My aim is to provide detailed answers to each of these questions.

Before proceeding, I will lay down a desideratum for the adequacy of any interpretation. Kant's discussion of objective temporal representation forms part of his argument for a synthetic a priori principle, namely, the Causal Principle (i.e., that, within the domain of appearances, every event has a cause). Therefore, we should strongly prefer interpretations which fit Kant's account of the necessitation of the subjective order into an internally coherent argument for the Causal Principle.

3 | CAUSAL VERSUS CONCEPTUAL INTERPRETATIONS OF THE NECESSITATION OF A SUBJECTIVE ORDER

I now present the two families of interpretation that have dominated the literature, vis-à-vis the necessitation of the subjective order. Note that much of the work on the "Second Analogy" avoids taking a stand on the nature of this necessitation, focusing instead on the relationship between perceiving particular events and discovering specific causal laws (e.g., Buchdahl, 1969; Friedman, 1992) or whether Kant's conclusion has ontological or merely epistemological import (e.g., Guyer, 1987, ch. 10; Watkins, 2005, ch. 3) without detailing the theory of mental operations underlying Kant's discussion. The work that does give an account of the necessitation of a subjective order falls neatly into two camps. *Causal* readings hold that it is the causal relations between the perceived states and the subject's perceptions that fix a certain subjective order of perceptions as necessary. *Conceptual* readings hold that it is the conceptual role of the concept of causation that imposes necessity on an order of perceptions. My aim in this section is to justify pursuing a *conceptual* reading by exhibiting grounds for scepticism about *causal* readings. Readers already convinced that the necessity of the subjective order arises due to the conceptual role of the concept of cause may skip to Section 4.

The most famous among *causal* readings is Strawson's (1966, pp. 133–140). Strawson argues that the causal dependence of perception upon worldly states, along with some modest assumptions about the causal chains

involved, entails that, whenever we perceive an event, the subjective order of perceptions is causally necessary.⁴ However, he holds that the only way to get from this result to the Causal Principle is via a “non-sequitur of numbing grossness.” According to Strawson, Kant simply conflates the causal necessitation of the subject's perception of the event with the causal necessitation of the event itself. The same charge of non sequitur is found in the *causal* readings of Lovejoy (1906), Pritchard (1909, pp. 288–91), Broad (1978, p. 168), and Walker (1978, p. 100). In accordance with the aforementioned desideratum, we should strongly prefer alternative readings if they are able to provide an interpretation with greater internal coherence.

Beck's (1978) *causal* reading seeks to avoid saddling Kant with a non sequitur. Beck argues that we must postulate causal connections between observed events, not just between those events and our perceptions, in order to recognize their objective order. His reconstruction runs as follows:

1. Our subjective order [A then B] fails to differentiate between two objective orders—AB and BA. To recognize⁵ objective order AB, we need some way of ruling out the possibility that B precedes A.
2. Supposing that A causes B is necessary and sufficient for ruling out the possibility that B precedes A (p. 133), because “the schema of the concept [of causation] is [AB]-irreversibly” (p. 151).
3. Therefore, we can rule out the possibility that B precedes A if and only if we suppose that A causes B.
4. Therefore, we can recognize the objective order AB if and only if we hold that A causes B.

This is a definite advance on Strawson: from (4) it follows that all recognizable temporal sequences are causal sequences—a promising step towards proving the Causal Principle. However, Beck's reconstruction is inadequate in other respects. One glaring problem is that (2) is indefensible. That events of type A cause events of type B does not entail that B cannot precede A. Consider an oscillating system (e.g., a pendulum), in which one half of the cycle (a swing to the left) gives rise to an event qualitatively identical to the one that caused it (a swing to the right).⁶ Perhaps Beck's reading can be rescued by reading A and B as referring to event-tokens rather than -types. It seems doubtful that this could be Kant's meaning given his frequent insistence that what is required is a causal “rule” (e.g., A193/B238). Moreover, there are further interpretative problems that this would not fix. Beck's reconstruction centres on a model in which we determine the order of two events by identifying a causal relation between them, whereas the dominant focus of Kant's treatment is the case in which we identify an objective change, that is, a single event, due to its being caused by some other state or event (cf. Guyer, 1987, p. 240). Therefore, we should not be satisfied with Beck's reconstruction.

Van Cleve (1999, pp. 128–132) attempts to repair Beck's reconstruction by adopting the model of a cause triggering a change from A to B, rather than a causal relation between A and B, and by revising the notion of “irreversibility” at issue. However, in his revised reconstruction, it is the conceptual role of causal presuppositions, rather than *de facto* causal relationships, which imposes the required structure of necessity on the subjective order. Therefore, Van Cleve in effect abandons the *causal* reading in favour of a *conceptual* approach.⁷

No attempt to explain the necessitation of a subjective order as arising from causal relations between the perceived events and the subject's perceptions has succeeded in finding an internally coherent argument for the causal principle, despite repeated attempts.⁸ This is in sharp contrast to *conceptual* readings, which have found much to endorse in Kant's argument. According to *conceptual* readings (e.g., Allison, 2004; Longuenesse, 2005; Melnick, 1973), when Kant speaks of the order of perceptions as being irreversible, this is not a matter of causal necessitation of the acts of perceiving. Instead, it is an upshot of the conceptual role of the concept of cause. On this view, the mental operation of applying the concept of cause imposes necessity on the temporal order of one's perceptions.

Recent versions of the *conceptual* reading (Allison, 2004, p. 252; Longuenesse, 2005, p. 241) have converged on a coherent reconstruction of Kant's argument for the Causal Principle:

1. To represent an event, the subjective order of perceptions must be irreversible.
2. For the subjective order of perceptions to be irreversible, they must be subsumed under the schema of causality.

3. Therefore, application of the schema of causality is a necessary condition for the experience of an event.
4. Therefore, restricting the domain to appearances (i.e., objects of possible experience), every event has a cause.

This reconstruction is well supported textually. Longuenesse (2005, pp. 253–258) identifies five expositions of this form of argument in the “Second Analogy” chapter, on the basis of close reading.

It is a considerable strength that *conceptual* readings allow for a highly coherent reconstruction, well supported by the text. However, thus far they have been less successful in spelling out the nature of the necessitation of the subjective order. Allison (2004) provides little explanation, simply stating that necessity is introduced when we “subsume [perceptions] under [...] the schema of causality” (p. 252). Longuenesse gives more explanation, but recent scholarship has deemed her account to be “less than pellucid” (Osborne, 2006, p. 420). Therefore, in what follows, I will pursue a *conceptual* reading, with the aim of explaining fully how the concept of cause generates this necessitation and what form of necessity arises.

4 | SUBJECTIVE NECESSITATION AS INFERENTIAL NECESSITATION

Our aim is to understand how deploying the concept of cause imposes necessity on the subjective order of perceptions. I begin by looking for textual clues.

4.1 | Textual evidence

The “Second Analogy” chapter contains five expositions of Kant's argument for the Causal Principle. These share a common argumentative structure, but Kant adds various pieces of additional information with each attempt. In particular, the second and third expositions of the argument⁹ provide more detail about how the mind operates in cases where it succeeds in representing an event or objective sequence.

If, therefore, we experience that something happens, then we always presuppose [voraussetzen] that something else precedes it, which it follows in accordance with a rule. [...] [O]nly under this presupposition [Voraussetzung] alone is the experience of something that happens even possible. (A195/B240)

As soon as I perceive or presuppose [voraus annehmen] that there is in this sequence a relation to the preceding state, from which the representation follows in accordance with a rule, I represent something as an occurrence. (A198/B243)

In both passages, Kant states that cases of successful event-representation are distinguished by the subject making a certain sort of “presupposition.” This presupposition (a) concerns the existence of some “preceding state,” and (b) there is “a rule” such that, given the preceding state, the event must follow. When we compare (b) with Kant's analysis of the concept of causation, we see that it is simply the presupposition that the preceding state causes the event. Kant describes the “schema of cause” as “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). (Kant equates the term “succession” with “change” (B233), which the “First Analogy” has shown to be equivalent to “event”). So what Kant is saying is that in order for a subject to represent the event AB, she must presuppose (a) that some state X obtains and presuppose the causal rule (b) that Xs cause ABs.¹⁰ For example, in order for Jones to represent the snowman melting, Jones must presuppose that some state obtains with respect to the snowman and that this kind of state causes such objects to melt. It might be that Jones already believes a causal rule, such as that sunshine causes objects made of snow to melt and judges that the sun is shining on the snowman on the basis of perception. (This explains Kant's phrasing, “perceive or presuppose,” in the third exposition (A198/B243).) But Kant also allows the possibility that the subject does not know what state causes the event (A199/B244), in which case the content of Jones's

presuppositions would be that some unknown state obtains with respect to this snowman and the causal rule that that type of state causes snowmen to melt.¹¹

How do subjects select specific causal presuppositions, and what is their justification in doing so? Kant's answer comes not in the "Second Analogy" but in his account of the "regulative principles" in the "Appendix to the Transcendental Dialectic" and the "Introduction" to *KU*. Kant gives a normative account rather than a description of our actual hypothesis-forming process (*KU* 5:182). He provides a transcendental argument for our entitlement to select more "unified" theories, for example, by preferring theories that describe a world governed by a smaller number of more general causal laws (A650/B678; *KU* 5:182).¹² Kant insists (A651/B679) that we do not antecedently perceive events to which we try to fit our hypotheses. Instead, the very process of converting sensory material into representations of events must take place against a background of framing causal hypotheses, which always remain subject to later revision. Both in selecting and in revising our bodies of causal hypotheses and judgments about events, we tend to prefer simpler, more unified theories and are entitled to do so. A full understanding of Kant's account of hypothesis-formation would require arbitrating the debate over the move from causal rules to universal laws: do subjects begin with mere causal rules that are only later replaced by universal laws, or does the "Second Analogy" already entail a subject forming hypotheses about universal laws? I lack space to resolve this here (cf. endnote 10).

We now have a partial account of the mental activities that enable the representation of objective temporal sequence: to represent an event AB, the subject must presuppose X and Xs cause ABs. However, further clarification is still needed. How and in what sense do these causal presuppositions render a certain ordering of perceptions necessary?

4.2 | Causation and hypothetical inference

Some commentators have suggested that the inferential role of cause is what equips it to enable temporal representation. Melnick (1973) emphasizes that "a causal law is precisely a rule that allows us, on the basis of features of appearances, to conclude to a certain temporal ordering of appearances" (p. 91). Longuenesse (2005) espouses a similar view, though some critics have found her proposal hard to decipher (Osborne, 2006, p. 420). This subsection defends the view that the inferential role of cause is crucial, while Section 4.3 goes beyond existing proposals to explain how this relates to the pre-judgmental level of the ordering of perceptions.

There is considerable textual evidence that it is the logical structure that the concept of cause embodies and the form of inference it supports that is decisive. Kant draws a close connection between the concept of causation and the logical structure of the hypothetical conditional. In his derivation of the "Table of the Categories" (A80/B105) from the "Table of Judgments" (A70/B95), the pure concept of cause and effect corresponds to the logical structure of the "hypothetical" proposition (A70/B95, A73/B98). Kant's hypothetical conditional expresses a non-truth-functional "connection [*Verknüpfung*]" between its antecedent and consequent, which Kant calls "consequence [*Consequenz*]". When the antecedent holds, the consequent also holds, and the former is the "ground [*Grund*]" of the latter (*Log* 9:105–106; cf. Longuenesse, 2005, pp. 236–238). According to Kant, causal judgments are a species of hypothetical judgments. Therefore, to make the causal judgment that X causes Y is a fortiori to make the hypothetical judgment that if X, then Y (where this involves a non-truth-functional grounding connection).

In its schematized form, the concept of causation adds further spatio-temporal content to this logical structure. Specifically, the antecedent is restricted to "the real" (A144/B183), that is, states of objects "in time" (A143/B182); the consequent is restricted to temporal "successions" (A144/B183), which Kant equates with "changes" or "events" (see above); and the grounding connection between them (i.e., "consequence") is restricted to a certain direction in time, such that the event "follows" the triggering state (A144/B183).¹³ As with all categories, this process of schematization leaves the "logical meaning" of the concept of cause intact—it in no way lessens the connection between causal judgments and hypothetical judgments. Schematization merely adds extra content, which "restricts" the sphere

of possibilities falling under the concept, while enabling the application of these pure concepts to objects of experience (A146f./B185f.).

Given that causal judgments embody hypothetical conditionals, it follows that they support a kind of inference, namely, the hypothetical syllogism. In the *Jäsche Logic*, Kant describes how hypothetical conditionals support two valid forms of inference: *modus ponens* and *modus tollens* (9:106). As one would expect given the intimate relation between causation and the hypothetical conditional, Kant frequently associates causal judgments with just these kinds of inference. He writes that the “concept of cause” is the concept of “something that allows an inference to the existence of something else” (A243/B301), that it is “required” for us to be able to “infer a consequence from the existence of given determinations of things” (*KpV* 5:51, amended, emphasis in original), and that “what the concept of cause says” is “that one thing [is] such that, if it is posited, a second thing must thereby necessarily be posited” (*Pröl* 4:257; cf. *G* 4:446). He equates the applicability of the “concept of causality” with the viability of inferences of the form “because one thing A is posited, another thing B must also necessarily be posited” (*KpV* 5:53).¹⁴ Commenting on the *Prolegomena* passage, Longuenesse (2005) notes that Kant’s phrasing “reproduces, almost word for word, Christian Wolff’s description of the inference in *modus ponens* in a hypothetical syllogism”, namely, “If, in a hypothetical syllogism, the antecedent is posited, the consequent must also be posited” (p. 235).

Kant’s view is that the judgment that Xs cause ABs involves the same logical content that is involved in the hypothetical conditional if X, then AB. A fortiori, this causal judgment is subject to the same inference-rules as the hypothetical conditional. In particular, it supports an inference in *modus ponens*: if a subject believes that Xs cause ABs and now posits that X obtains, then she “must necessarily posit” that AB occurs.

What are the consequences of this for our understanding of the “Second Analogy”? We can now clearly see the relation between the causal presuppositions identified above and the representation that AB occurs. The presuppositions that Xs cause ABs and that X obtains serve as the premises of a hypothetical syllogism, of which the judgment that AB occurs is the conclusion. This reading is supported by Kant’s use of the language of a hypothetical syllogism in *modus ponens* in the fourth exposition¹⁵ of the argument of the “Second Analogy”: “something [i.e. some state] ... precedes, and when this is posited, the other [i.e. the event] must necessarily follow” (A201/B246). Any subject who assents to those presuppositions must draw the conclusion that AB occurs. To capture Kant’s language of what the subject “must necessarily posit,” we can say that it is “inferentially necessary” for a subject who makes these presuppositions to draw the conclusion that AB occurs. Returning to our example, now that Jones believes (a) that the sun is shining on this snowman and (b) that sunshine causes snowmen to melt, it is inferentially necessary for him to draw the conclusion (c) that this snowman melts.

We now have a well-motivated account of how the conceptual role of cause imposes a kind of necessity on the subject’s mental activities. When she deploys the concept in certain causal presuppositions, it becomes inferentially necessary for her to judge that a certain event has occurred. We are well on our way to a fully explicit account of how the concept of cause can render the subjective order of perceptions necessary, but some questions still remain. First, how does the inferential necessitation of making a judgment relate to the ordering of perceptions (Section 4.3)? Second, what kind of modality is at stake in this notion of inferential necessity (Section 5)?

4.3 | Inferential necessitation of a subjective order of perceptions

In the previous subsection, I argued that the causal presuppositions X obtains and Xs cause ABs make the judgment that AB occurs inferentially necessary. Does this suffice for rendering the subjective order of perceptions necessary? What we have said so far has dealt only with the doxastic level of “judgments [*Urteile*]”, while Kant’s argument seems to turn on the subdoxastic level of “perceptions [*Wahrnehmungen*]”. Kant holds that inferences always operate at the level of judgments (*Log* 9:114), so it is not obvious how the inferential role of these causal presuppositions could relate to the level of “perceptions.” My task in this subsection is to explain how the inferential necessitation of a judgment translates into the necessitation of a subjective order of perceptions.

One possibility is to revise our interpretation of the argument, taking Kant's subject matter to be the necessitation of judgments, rather than the necessitation of an ordering of perceptions. On this reading, having explained the inferential necessity of judging that *AB* occurs, our interpretative task would be complete.¹⁶ There is some support for this approach: Kant's stated aim in the "Analogies of Experience" is to establish claims about "empirical cognition" (B218-9; *Prolegomena* 4:310), which is usually taken to imply that he is operating at the level of judgments. Nevertheless, the text of the "Second Analogy" makes it clear that the necessitation of the pre-judgmental activity of "apprehension" is central to Kant's concerns. Kant's discussion turns on the order of "perceptions" being irreversible, not just on certain judgments being necessary (A192/B237); on the "subjective order of apprehension" and with the subjection of apprehension to a rule (A193/B238; A195/B240; A200/B245). Moreover, Kant holds that the result of the "Second Analogy" is "the formal condition of all perception" (A199/B244). To deny that Kant is concerned with the necessitation of a subjective order of perceptions, we would have to interpret him as continually misstating his point.¹⁷ Furthermore, a key conclusion of the "Transcendental Deduction" was that "all synthesis, through which even perception itself becomes possible, stands under the categories" (B161). Accordingly, it is natural to expect implications for the synthesis of apprehension within the "System of Principles."¹⁸ Unless it proves completely impossible to find one, we should seek an explanation of how the inferential necessitation of a judgment brings with it the necessitation of a subjective order of perceptions.

The key to understanding this connection is Kant's view that empirical judgments involve the synthesizing of perceptions: "[e]xperience is an empirical cognition, i.e., a cognition that determines an object through perceptions. It is therefore a synthesis of perceptions [...] [and] contains the synthetic unity of the manifold of perception in one consciousness" (B218, cf. A764/B792). Kant holds that judgments about specific worldly states, objects, and events, such as the judgment that *AB* occurs, must be "empirical cognitions," which, as this passage explains, means that they must involve the synthesizing of sensible material. This is an upshot of Kant's view that the representations of the understanding cannot have "relation to an object" unless they stand in the right kind of relation to sensibility: "we cannot cognize any object [...] except through intuitions that correspond to those concepts" (B165; cf. A50/B74). Without taking a stance on what kind of content intuitions have or what is required for an intuition to "correspond" to a judgment, we can say that for the "empirical cognition" that *AB* occurs to be possible, the subject must produce a perception which corresponds to it, by synthesizing sensory material.

What kind of "synthesis of perceptions" might be required to produce a perception corresponding to the judgment that *AB* occurs? Presumably, it would consist of a perception of *A* and a perception of *B*. These perceptions would have to be put together into a temporally structured whole, with the temporal dimension provided by the form of inner sense. In other words, to produce a perception corresponding to the judgment that *AB* occurs, the subject would have to "place" a perception of *A* before a perception of *B*. This act of arranging perceptions into a certain form would be part of the "synthesis of apprehension", carried out by the "power of imagination." In our example, Jones's "power of imagination" would "place" a perception of the snowman standing tall prior to a perception of the melted snowman, on the canvas provided by the formal intuition of time. This picture fits well both with Kant's descriptions of the imagination's synthesizing activities prior to the formation of judgments (A98-103, B151-6, B160f.); and with Kant's repeated descriptions in the "Second Analogy" of a "synthesis of apprehension" in which the "power of the imagination" "places" or "connects perceptions" (B223) in a certain "order" (B223; A193/B238).¹⁹

Given that this activity of *placing the perception of A before the perception of B* is required for the activity of *judging that event AB occurs*, it is intuitively plausible that any forms of necessity applying to the latter would also apply to the former. If a subject must *judge that AB occurs*, she must a fortiori perform the mental activities constitutive of making that judgment. Now, as argued in the previous subsection, when the subject makes presuppositions of the form *X* and *Xs* cause *ABs*, this makes it inferentially necessary for the subject to *judge that event AB occurs*. Therefore, it follows that making those presuppositions also makes it inferentially necessary for the subject to *place the perception of A before the perception of B*.²⁰ When this act of synthesis is a constituent part of forming a judgment and the judgment in question is one that is inferentially necessary, the synthesis is not an arbitrary act stemming from

idiosyncrasies of the subject. Rather, it is necessary in just the same sense that the judgment itself is necessary. The presuppositions that render the judgment inferentially necessary also render the subjective order of perceptions inferentially necessary: The activity of placing the perceptions in that order becomes something that the subject must do, given her assent to the premises of the causal inference.

We now have a full account of the mental activities that, according to Kant, render the representation of objective temporal order possible: The subject makes certain causal presuppositions; these presuppositions render it inferentially necessary for the subject to draw the conclusion that a certain event occurs and thereby render inferentially necessary the particular subjective order of perceptions that is required for drawing that conclusion. In the next section, we look more closely at the central term in this account, namely, inferential necessitation.

5 | INFERENCE NECESSITATION IS NORMATIVE NECESSITATION

In what sense, for Kant, *must* a subject assent to the conclusion of a causal inference for which she believes the premises? In what sense *must* she place her perceptions in the subjective order that is “inferentially necessary”? This section argues that the “must” is normative. The necessitation of judging that AB occurs and of performing the acts of synthesis constitutive of making that judgment is a matter of epistemic normativity.

“Normativity” is not a term used by Kant (though he does use the term “norm” in the sense of “model or guideline for assessment”²¹); so let me first pre-empt the worry that it is anachronistic to claim that normativity plays a central role in the “Second Analogy.” Normative facts or statements are those that deal in “oughts,” “shoulds,” reasons, duties, and so on. In several contexts throughout his critical philosophy, Kant draws distinctions between what, in modern parlance, we can call the normative and the non-normative. Consider the contrast between “natural philosophy” and “moral philosophy” presented in the *Groundwork*: “the first [determines certain laws] as laws in accordance with which everything happens, the second [determines certain laws] as laws in accordance with which everything ought to happen” (4:387f.). Another such contrast occurs when Kant introduces the “maxims of the power of judgment”: “they do not say what happens, i.e., in accordance with which rule our powers of cognition actually perform their role and how things are judged, but rather how they ought to be judged” (5:182). Other cases in which Kant draws this distinction include his remarks about the nature of logic (see below), the kind of necessity to which aesthetic judgments are subject (*KU* 5:239), and perhaps (though this is controversial) the famous distinction between “questions about what is lawful (*quid juris*)” and “[questions] which concern the facts (*quid facti*)” (A84/B116, amended), that is, the distinction between the way we use certain concepts and the way that we would be “justified” to use them (A84/B116). The modern term “normativity” gives us a useful way to designate one side of Kant’s contrast, picking out claims concerning what we “ought” to do or would be “justified” to do, rather than what merely is.

I now explain the proposal that causal presuppositions normatively necessitate a judgment and a fortiori an ordering of perceptions. What difference do the causal presuppositions make, vis-à-vis the judgment that AB occurs? One important factor is that a subject who believes that X and that Xs cause ABs has conclusive reason to believe that AB occurs: those presuppositions *justify* that conclusion. The proposal is that for the judgment to be inferentially necessitated is for it to be justified in this way.

Is there any basis for ascribing this kind of view to Kant? The first piece of evidence is that Kant explicitly talks in terms of “justification” within the “Second Analogy”:

[A] rule is always to be found in the perception of that which happens, and it makes the order of perceptions that follow one another (in the apprehension of this appearance) necessary. [...] This connection must therefore consist in the order of the manifold of appearance in accordance with which the apprehension of one thing (that which happens) follows that of the other (which precedes) in accordance with a rule. Only thereby can I be justified in saying of the appearance itself, and not merely of my apprehension, that a sequence is to be encountered in it, which is to say as much as that I cannot arrange the apprehension otherwise than in exactly this sequence. (A193/B238, emphasis added)

Here, Kant begins by repeating the claim that the representation of events is only possible when the “order of perceptions” is rendered “necessary.” Next, he asserts that this necessity can only be created by positing a causal connection between a state “which precedes” and the event itself. Finally, Kant explains that the difference made by positing this causal relation is that the subject is “thereby justified” in making the claim that an event has occurred. Explicitly, it is the epistemic or justificatory role of the causal presuppositions that is crucial in rendering the “order of perceptions” “necessary.”

This language of “justifying” is repeated in his second exposition of the argument:

If, therefore, we experience that something happens, then we always presuppose that something else precedes it, which it follows in accordance with a rule. For without this I would not say of the object that it follows, since the mere sequence in my apprehension, if it is not, by means of a rule, determined in relation to something preceding, does not justify any sequence in the object. (A195/B240, emphasis added)

Without making the causal presuppositions, Kant writes, the subject would not be justified in making a claim that there is a “sequence in the object”, that is, an objective order of states. The difference that the presuppositions make is a matter of what they “justify.” These passages strongly support the conclusion that the causal presuppositions’ “necessitation” of a particular ordering of perceptions is a matter of epistemic normativity.

The same conclusion is also supported by Kant’s apparently normative conception of the laws of logic. As argued in Section 5, the necessitation of a judgment by causal presuppositions turns on the inference-rules governing the hypothetical conditional. In the *Jäsche Logik*, we find the following characterization of the rules of logic:

Logic is [...] a science of the correct use of the understanding and of reason in general, not subjectively, however, i.e., not according to empirical (psychological) principles of how the understanding does think, but objectively, i.e., according to principles a priori for how it ought to think. (9:16, amended, emphasis added)

In logic [...] the question is not about [...] how we do think, but how we ought to think ... In logic we do not want to know how the understanding is and does think and how it has previously proceeded in thought, but rather how it ought to proceed in thought. (9:14, emphasis added)

In both passages, Kant draws the normative/non-normative distinction and firmly locates the laws of logic on the normative side. Tolley (2006) has raised doubts over whether these remarks about the nature of logic represent “Kant’s ‘considered’ or ‘mature’ (‘Critical’) position” (p. 398). (Tolley also raises substantive concerns, which are discussed below in Section 6.) However, the hypothesis that these remarks are remnants of a pre-Critical view is belied by the existence of similar remarks in lecture-transcripts from the Critical period:

We can divide the laws of our understanding in the following way[:]

1. Rules for how we think.
2. Rules for how we ought to think.

Sometimes we think completely wrong-headedly. This use can never agree with the rules. This is the misuse of the understanding and is excluded here. Logic teaches the latter [i.e. rules for how we ought to think], namely, how to use the objective rules of our understanding. (V-Lo/Wiener 24:791, amended)²²

Logical rules are not ones according to which we think, but according to which we ought to think. (V-Lo/Dohna 24:694)

Kant holds that we often fail to think in accordance with the logical laws laid out in the course of the lectures. But the principles of logic are not descriptions of how we happen to think. Rather, they constitute standards for how we ought to think. Kant links this normative conception of logic with his notion of “critique”:

[Logic] is useful and indispensable as a critique of cognition, however, or for passing judgment on common as well as on speculative reason, not in order to teach it, but only to make it correct and in agreement with itself. (Log 9:20, Kant's emphasis; cf. Log 9:15, Log 9:16, V-Lo/Wiener 24:792, V-Lo/Dohna 24:694f.)

Far from being a remnant of Kant's pre-Critical thought, his normative conception of logic is intimately connected with his mature conception of philosophy as providing a critique of our mental faculties. The procedure appears to be this: first, we reflect on the nature of the understanding and identify principles that are universally valid, rather than being plausible only due to some bias that we happen to have.²³ Next, we use this body of principles as a "doctrine" for "critiquing" the actual patterns of thought of ourselves and others. This step may be supplemented by empirical discoveries about what errors we are most prone to make. Kant terms this empirically informed project "applied logic" (A53/B77, Log 9:18). We would therefore be unjustified in taking Kant's remarks on the normativity of logic to be a remnant of his pre-Critical views. Rather, we should try to accommodate Kant's mature characterization of logic as another facet of his critical project, in which reflecting on the nature of our faculties provides us with certain epistemic standards, which can then be used to root out error. Kant holds that the principles of logic, and a fortiori the rules of hypothetical inference, are normative in character, providing standards of "how we ought to think" (Log 9:14).

To sum up the argument of this section, we have found significant textual evidence that inferential necessitation is a form of epistemic normativity. This evidence was found both in the "Second Analogy" and in Kant's general statements about the nature of logical laws. The sense in which Jones *must* draw the conclusion of a hypothetical syllogism when he believes its premises is that he *ought* to draw that conclusion and will be open to epistemic criticism if he does not. Making causal presuppositions imposes a normative structure on the subject's mental operations. It is this normative necessity that removes the arbitrariness of these operations, thereby enabling objective purport. Once Jones presupposes that the sun is shining on the snowman and that sunshine causes snowmen to melt, his judgment that the snowman melts is not made arbitrarily but on the basis of a conclusive reason. Similarly the synthesis of perceptions required to make that judgment—placing a perception of the snowman standing tall before a perception of the melted snowman—is not an arbitrary activity stemming from the subjective constitution of Jones's mind, but an activity that is normatively necessary. This normatively necessary subjective order is the feature of Jones's perception in virtue of which it represents an objective temporal sequence.

6 | OBJECTION: NORMATIVITY AND THE POSSIBILITY OF DEVIATION

We found ample textual evidence that inferential necessity is normative. However, Tolley (2006) argues that we cannot coherently attribute to Kant the claim that logical rules are normative. This section deals with Tolley's objection.

Tolley argues that Kant is committed to the following claims:

1. For a rule to be normative for a subject, it must be possible for the subject to deviate from that rule.
2. It is not possible for thinkers to deviate from the rules of logic.

From these commitments, it follows that it would be incoherent for Kant to hold that the rules of logic are normative for thinkers. I will not question Kant's commitment to (1),²⁴ but will argue that Tolley is wrong to attribute (2) to him.

What would it mean for a thinker to deviate from the laws of logic? Focusing on the laws relevant to our topic, logic sets out which forms of inference are valid. To deviate from these laws would simply be to make an invalid inference. If Kant holds that it is possible for thinkers to make invalid inferences, then he is not committed to (2).

Is there evidence that Kant thinks that it is possible to make an invalid inference? Kant's discussion of "logical illusion" in *KrV* clearly shows his commitment to the idea that we sometimes make invalid inferences, which offend against certain logical rules: "Logical illusion, which consists in the mere imitation of the form of reason (the illusion of fallacious inferences) arises solely from a failure of attentiveness to the logical rule" (A296/B353). Consequently, one

of the tasks of formal logic is to “discover false illusion in the form of syllogisms” (A333/B390). Similarly, at least some of the errors Kant identifies in the “Dialectic” arise from fallacious inference—the “Paralogisms” are the result of making a “fallacious inference [*Fehlschluss*]” due to an ambiguous term in the premises (A341/B399); and similarly the “cosmological syllogism” that produces the “Antinomies” is a “mistake” arising from an ambiguous term. The *Hechsel Logic* also shows Kant describing formally invalid inferences not as impossible but as “erroneous or false”:

In regard to truth, the syllogismus is divided into true, and erroneous or false. An inference can be false, in such a way that the error lies either in materia or in forma. The inference suffers from an error [...] in forma if the consequentia is drawn falsely from true premises. (V-Lo/Hechsel, LV 2:455)

The propositions in an inference can be true, but the inference can nonetheless be false as to form, i.e., a fallacy. (V-Lo/Hechsel, LV 2:469)

Kant consistently endorses the possibility of deviating from the laws of valid inference, and hence denies (2) vis-à-vis these rules. Indeed, the notion that humans are naturally driven to certain violations of the rules of correct inference is central to his conception of reason. It follows that there is no reason to think that Kant denies that the rules for valid hypothetical syllogisms can be violated by thinkers.²⁵ We can reject Tolley's argument against the normativity of this logical rule and uphold the suggestion that the causal presuppositions X and Xs cause ABs make it normatively necessary for the subject to judge that AB occurs.

Tolley (2006) backs up his claim that it is impossible for thinkers to deviate from the rules of logic by contrasting the activity of thinking with the activities governed by moral laws (p. 374). In the moral case, humans have a capacity to choose freely whether or not to obey the laws, while in thought we seem to have no such “*Willkür*-correlate.” How can we reconcile this point with the thesis that rules of causal inference are normative? For our purposes it makes sense to discuss this vis-à-vis causal inference, rather than reasoning in general. Is there a “*Willkür*-correlate” in play in the domain of causal inference?

To answer this question, we need to understand what kind of “*Willkür*-correlate” is required for normative constraint. Kant elucidates the term “choice [*Willkür*]” as “[t]he faculty of desire [...] [i]nsofar as it is joined with one's consciousness of the ability to bring about its object by one's actions” (MS 6:213). This capacity is called free if it “can be determined by pure reason”, that is, if it is capable of selecting maxims on the basis of their adherence to the moral law. But in humans, “choice [*Willkür*]” is also influenced by “sensible” factors, namely “inclination, or sensible impulse”. As Tolley (2006) acknowledges, it is the fact that the faculty of desire is subject to these “possibly obstructive forces” (p. 373) that makes deviation from the moral law possible and thereby renders the moral law imperatively normative. We might be tempted to think that it is the element of “choice” that renders the moral law normative. However, Kant's position is that the combination of determination by a (self-imposed)²⁶ law and influence by “possibly obstructive forces” is the key ingredient for normativity. This is made manifest by Kant's explicit application of normative standards to other activities that are not within the purview of the “faculty of desire”, notably aesthetic judgments (*KU* 5:239) and the systematizing activities of reason and reflective judgment (*KU* 5:182; Mudd, 2016). For Kant, normative constraint does not depend on the presence of a capacity for choice, but rather on the presence of “possibly obstructive forces.”

Are “possibly obstructive forces” in play in the domain of causal inference? Yes. As discussed, making causal judgments about particular objects is not possible without a contribution from sensibility. It is for this reason that, in order to move from the premises X and Xs cause ABs to the conclusion AB occurs, a subject must carry out a certain synthesis of perceptions. Kant states in the introduction to the “Transcendental Dialectic” that once sensibility is in the frame, a force is in play that can cause the mind to deviate from the “laws of the understanding” (A350f./B294f.; cf. *Log* 9:53f.). Indeed, Tolley (2006) accepts that his argument has no force for domains in which the understanding works in tandem with other faculties such as sensibility (pp. 374, 399) and freely admits that logical rules may be normative when “applied” to those domains. Tolley fails to consider the possibility that the self-same formal laws that are discovered in pure logic might be normative for human subjects applying those laws in empirical judgment, but I see no reason for ruling this out. In the context of causal inference, sensibility constitutes the “possibly obstructive force” that makes deviation from logical rules possible and thereby qualifies them as normative.

7 | CONCLUSION

The necessitation of an ordering of perceptions is a form of inferential necessitation, resulting from the subject's causal presuppositions. This inferential necessitation is a form of epistemic normativity. The interpretation for which I have argued makes good sense of Kant's text, fits well with his argumentative aims and coheres closely with his broader position on the nature of causal inference. If correct, this interpretation shows that normative notions are in play right in the heart of Kant's "Transcendental Analytic" and that his conception of cognition turns at a crucial point on the idea that the mind's operations are normatively structured: It is this very normative structure, imposed by causal presuppositions and rules of logical inference, that enables the representation of objective temporal sequence. What's more, I have argued that to understand Kant's text, we have to see this normative structure as extending beyond the level of judgment and encompassing the "synthesis of apprehension" carried out by the imagination, in which sensible material is placed in a temporal order. I have therefore found support for Pollok's (2017) view that, for Kant, the "determination of sensibility" is subject to normative standards.

To further clarify this conclusion and to pre-empt misunderstandings, let me emphasize what this conclusion is not. I have not argued that the Causal Principle is itself a normative principle. On the interpretation I have given, it is alethically necessary that, for all events AB and all subjects S, AB is only perceptible to S if S judges AB to be caused. A subject who places a perception of A before a perception of B without presupposing that something causes event AB does not thereby produce a perception of AB that is defective in some respect, but fails to produce a perception with objective temporal content. Therefore, the Causal Principle is a non-normative, alethic modal principle about perceptible events. Thus, my interpretation of the "Second Analogy" should not be taken as supporting Allison's (2004, p. xvi) and Pollok's (2017, p. 2) view that "synthetic judgments a priori" such as the Causal Principle serve as "norms" for cognition. On my view, it is *adherence* to the Causal Principle, not *being assessable* with regard to it, that conditions the possibility of objective temporal contents, and hence of objectively valid judgments about events. In this I agree with Pollok's (2017) claim that adherence to such principles is constitutive of "objective validity" in theoretical cognition (p. 10, 140f.). However, I see no reason to follow Pollok (2017) in claiming that the Causal Principle serves as a norm for judgments more broadly, for example, the judgment that God spontaneously created the world (p. 10, 140f.). As I see it, neither the "Transcendental Dialectic" nor Kant's positive account of rational faith bears out the claim that judgments can be shown to be defective simply by pointing out their deviation from "principles of pure understanding" (which are in any case restricted to the domain of appearances).²⁷

Nevertheless, the interpretation for which I have argued provides some support for an extremely wide-ranging interpretation of the role played by normativity in Kant's philosophy of mind. We have explored one area in which Kant insists that necessitation of the mind's operations is required for objective representation and found that the necessitation in question is provided by normative structures. Therefore, at least in the case of objective temporal contents, we have found Kant espousing the view that the contentfulness of mental states—of perceptions as well as judgments—depends on their having a particular normative status.

This specific thesis linking objective content to normative necessitation suggests that we should explore a more general thesis, like the view attributed to Kant by McDowell (1994), according to which normative necessitation is required for all kinds of objective content. The "Second Analogy" turns on the premise that the subjective order of perceptions cannot have objective purport if it is arbitrary, but there is textual evidence that Kant is committed to the general thesis that objective purport requires a necessitation of the mind's activities. In the "Second Analogy," it is normative necessitation that removes the arbitrariness; so perhaps when Kant writes that "our thought of the relation of all cognition to its object carries something of necessity with it [...] which is opposed to our cognitions being determined at pleasure or arbitrarily [*aufs Geratewohl, oder beliebig*]" (A104), he means that all relation to objects requires normative necessitation (cf. A108, B218f., A191/B236).²⁸ On the other hand, it may be that only syntheses of "connection [*Verknüpfung, nexus*]" and not of "composition [*Zusammensetzung, compositio*]" require normative constraint in order to produce representations with objective purport—a possibility suggested by Kant's characterization of the former as "not arbitrary [*nicht willkürlich*]." If so, it would only be the representation of

necessary connections (rather than contingent existences) that requires normative constraint.²⁹ Such questions require further investigation. Starting points for expanding this investigation might include exploring whether normative notions are at work in the other “Analogies of Experience” and the rest of the “System of Principles” and providing a clearer account of how normative guidance of the “synthesis of apprehension” is possible.

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ENDNOTES

- ¹ I follow Burge (2010) in using underlining to denote mental contents.
- ² Cf. B233, A190/B235, A198/B243 and A201/B246.
- ³ I hereby adopt a semantic rather than epistemic reading of Kant's point, *pace* Beck (1978) and Guyer (1987). Watkins (2005) argues that epistemic readings of the “Second Analogy” will inevitably result in circularity, a contention borne out by Van Cleve's (1999, pp. 128–132) attempt to repair Beck's epistemic reading.
- ⁴ Strawson (1966) describes the subjective order as being a matter of “logical” rather than “causal” necessity (p. 136) but since it is contingent on facts about the causal processes which produce perception, it is more accurately classified as causal necessity. Cf. Van Cleve (1973, p. 82).
- ⁵ I use the term “recognize” in order to gloss over the fact that Beck gives the argument an epistemic rather than semantic reading. Cf. n. 3.
- ⁶ Cf. Van Cleve (1999).
- ⁷ In any case, Van Cleve argues that the argument as he reconstructs it is not cogent.
- ⁸ Further grounds for pessimism about ‘causal necessitation’ readings are provided by Van Cleve's (1973, pp. 84–87) criticism of Dryer.
- ⁹ Second exposition = A194f./B239f.; third exposition = A198-201/B243-6. I follow Longuenesse's (2005) numbering (pp. 253–258).
- ¹⁰ I set aside the fraught question of how Kant gets from causal rules to universal causal laws. In my view, Kant holds that the concept of causation analytically entails causation according to universal laws (B5, A91/B124, G 4:446, KU 5:195, RGV 6:35).
- ¹¹ Must the subject's causal assumptions match the physical laws which Kant (in *MAN*) argues are transcendently necessary? In my view, Kant holds that all subjects' experience necessarily conforms to these laws and that the transcendental philosopher can discover this fact and these laws by reflecting on the preconditions of experience (as Kant does in *MAN*). Nevertheless, this is compatible with many subjects failing to believe those laws, or even believing divergent laws, for example, Aristotelian physics. Therefore, Kant does not hold that subjects always make causal assumptions that are in line with the physical laws derived in *MAN* (though any assumptions contrary to them will in fact be false).
- ¹² These sections deal most explicitly with reason's attempts to unify the judgments and concepts delivered by the understanding, but Kant also writes that the “regulative use” of the “transcendental ideas” “direct[s] the understanding to a certain goal respecting which the lines of direction of all its rules converge at one point” (A644/B672) and that “without [“the law of reason to seek unity”] we would have [...] no coherent use of the understanding” (A651/B679). In other words, the drive towards unity is operative at the initial stage of forming causal hypotheses (examples of which are given at A646/B674 and A662f./B690f.), not just the subsequent stage of revising these in pursuit of systematicity.
- ¹³ Kant holds that most effects start as soon as their causes are present, but that since events have a temporal duration, they nevertheless “follow” their causes in an important sense (A202f./B247-9).
- ¹⁴ Kannisto (2017, pp. 510–2) argues that causal inferences are not possible until the move from causal rules to universal causal laws has been made. The passages cited, which demonstrate that for Kant the mere applicability of the concept of cause supports hypothetical inferences, suggest either that Kannisto is wrong to ascribe this view to Kant or that the concept of cause entails lawful causation (cf. n. 10).
- ¹⁵ Fourth exposition = A201f./B246f.. Cf. note 9.

- ¹⁶ For independent reasons, Allison (2004) takes this route (p. 230).
- ¹⁷ Commenting on Kant's use of the phrase "rule of apprehension" (A191/B236), Allison (2004) accuses Kant of being "misleading" (p. 234). However, he seems to underestimate the frequency of passages that jar with his reading.
- ¹⁸ Thanks to an anonymous reviewer for this point.
- ¹⁹ Does this view of the imagination's activities commit me to a "conceptualist" interpretation of Kant? No. The account does not deny that the content of intuitions includes features which cannot be represented by concepts (cf. Allais, 2009; Tolley, 2013). Nor does it claim that individual intuitions would be impossible without acts of synthesis (cf. McLearn, 2014; Tolley, 2013). Nor does the account deny that temporally extended sequences of intuition could be produced without a contribution from the understanding—intuitions could be placed in a temporal sequence by merely associative processes (cf. Hanna, 2005). However, I do read Kant as insisting that those associative processes would not produce perceptions with *objective* temporal contents, an interpretation which seems obligatory for understanding the 'Second Analogy'. The account is therefore not entirely neutral about the relation between sensibility and understanding: I maintain that perceptions produced in the context of activities that also implicate the understanding can have a certain kind of content which perceptions produced independently of the understanding would lack. However, this thesis is quite compatible with all but the most extreme of non-conceptualist positions.
- ²⁰ If inferential necessitation behaves like an alethic necessity operator, then this is a consequence of the Distribution Axiom: $\Box J$ ("Judging AB is inferentially necessary."), $\Box(J \rightarrow P)$ ("In order to judge AB, one must place A before B."), $\Box(J \rightarrow P) \rightarrow (\Box J \rightarrow \Box P)$ (an instance of the Distribution Axiom) $\vdash \Box P$ ("Placing A before B is inferentially necessary"). Alternatively, if inferential necessitation behaves like a deontic obligation operator (as I will argue), then the same follows by an analogue of the Hypothetical Imperative. One ought to judge AB. Placing A before B is a necessary means to judging AB. If one ought to ϕ , then one ought also to carry out the means necessary for ϕ -ing. Therefore, one ought to place A before B.
- ²¹ *KU* 5:239; *Log* 9:15. See also Pollak (2017, p. 2).
- ²² Instead of "Logic teaches the latter," Young has "Logic teaches this last" for "*die Logik lehrt das Letzte*," thereby obscuring Kant's meaning.
- ²³ It is this that explains Kant's insistence that pure logic is independent of the discoveries of empirical psychology. We will return to the question of whether it is possible for the mind to deviate from these rules in Section 6.
- ²⁴ Lu-Adler (2017, p. 207) proposes distinguishing between imperatival and evaluative normativity. While it is clear that Kant endorses (1) for imperatival normativity—facts about what subjects should do—it is doubtful whether he does so for evaluative normativity—facts about the goodness of things. Leech (2017, pp. 366f.) defends the normativity of logic in Kant by decoupling normativity and possible deviation in this way. However, since I interpret inferential necessitation as imperatival, I accept (1) for the purposes of discussion.
- ²⁵ See Lu-Adler (2017, pp. 211–213) and Leech (2017, pp. 356–363) for additional argument that Kant endorses the possibility of illogical thought.
- ²⁶ It is beyond our scope to discuss whether the laws of the understanding are self-imposed in a similar fashion to the moral law. Note that Kant writes that theoretical reason "must regard itself as the author of its principles" (G 4:448); and that "freedom in thinking signifies the subjection of reason to no laws except those which it gives itself" (*WDO* 8:145). Cf. Förster (2011, p. 124).
- ²⁷ Thanks to an anonymous reviewer for pressing me to clarify this.
- ²⁸ Cf. Ginsborg (2008, p. 73).
- ²⁹ My thanks to an anonymous reviewer for suggesting this possibility.

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