A New Reading of The Second Analogy: The Nomologically Determined Object View

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In this paper, I offer a new reading of the main argument of the Second Analogy of Experience. I introduce the view after rehearsing two existing criticisms of the two main interpretive strategies for averting the famous *non sequitur* objection from Arthur Lovejoy and P.F. Strawson. These are respectively the "looseness of fit" views of Gerd Buchdahl, Lewis Beck, and Henry Allison and the "Newtonian" view of Michael Friedman. Friedman identifies a textual problem with the former: it does not allow us to see how particular laws of nature are necessary. In turn, Allison identifies a philosophical problem with the latter: it makes implausible demands on those making particular empirical causal judgements.

The view I sketch and suggest here—call it the "nomologically determined object" view—avoids both above shortcomings while extracting a conception of particular empirical laws of nature untouched by the *non sequitur* objection. Causality is a necessary principle of nature as such and particular empirical laws of nature are necessary for one and the same reason: "changing in such and such manner" is the form of the only possible mark by means of which we individuate any possible object of cognition and hence discover further determinations that constitute (the state of) any possible object that changes in such and such manner. In short: objects necessarily obey particular causal laws because a distinctive manner of changing determines what states of what sensible objects change in that distinctive way—in other words, empirical causal laws and their objects are coindividuated. As I show in closing, such laws need not be deterministic, and the *non sequitur* objection, recast in light of this result, further helps identify how Kant mistakenly though understandably thought that they must be.

In Section I, I exposit my understanding of the main argument of the Second Analogy together with the *non sequitur* objection. In Sections II and III, I review respectively the looseness of fit views and the Newtonian view. In Section IV, I offer the nomologically determined object view. I close in Section V.

I

Although vexing, Kant's proof of the Second Analogy is, on my reading, *prima facie* remarkably simple. He first observes that we are always successively connecting perceptions in consciousness. Some of these perceptions are subject to what Strawson calls "order indifference."[1] Order indifferent perceptions leave "the **objective relation** of the appearances … undetermined" (KrV, B 233-4). So, to cognize a determined, objective temporal relation amongst appearances, an order of those perceptions must be determined as necessary (KrV, B 234). For example, in seeing a ship driven downstream "the order in the sequence of the perceptions is … determined" in that it is impossible to apprehend first the ship downstream and then upstream (KrV, B 237). If there is a necessity to the way we synthesize perceptions, it can only be that of a pure concept of the understanding, in this case the concept of the relation of cause and effect (KrV, B 234).

Strawson and Lovejoy charge that this last step is *non sequitur*. Strawson calls the necessity that B must in fact have been perceived after A "conceptual necessity," the idea being that we cannot apply the concept of objective change without invoking the necessity of some ordering of perceptions [A, B] of that change. He objects that the concept of causal necessity is not this kind of conceptual necessity, but rather is "equivalent to conceiving the event of change or transition as preceded by some condition such that an event of that type invariably and necessarily follows upon a condition of that type." The "*non sequitur* of numbing grossness" is thus supposedly the claim that the conceptual necessity of some ordering of perceptions [A, B] of some objective change establishes *tout court* the existence of causality in the above sense.[2]

II

In response to this difficulty, some simply deny that Kant is attempting to establish that there are necessary, particular empirical causal laws in the Second Analogy. Rather, Kant is simply giving an account of the objectivity of the natural order as such. On such a view, what Kant means by the concept of causality just is the concept of a necessary, determinate succession, rather than the concept of uniformities or necessary progressions from events of a

[1] Strawson 2019, 131.
[2] Strawson 1966, 137. See also Lovejoy 1967, 300-1.

certain type to events of some other (causally related) type.[3] Such views also loosen the connection between Kant's view of causality and Newtonian physics, treating the latter as simply the best result of the reflective power of judgement and reason that we had at Kant's time, rather than as constitutively necessary of experience as such. Accordingly, following Buchdahl, call them "looseness of fit" views.[4]

Friedman rightfully objects that such a view accounts neither for why empirical laws of nature are necessary, which Kant advances as late as the 3rd *Critique* (KU, 5: 183), nor for any role for the understanding in conferring this necessity, even though Kant indicates that the understanding does play such a role, for instance in telling us that particular empirical laws obtain in virtue of the transcendental laws of the understanding and that they all "stand under" these laws (KrV, B 165).[5]

The difficulty for a looseness of fit view is that if Kant does not seek to establish that particular empirical laws are necessary in the Second Analogy, it is unclear where else he does. On the basis of Kant's appeal in the third *Critique* to the principle of the "unity of the manifold of experience" and our need to think of nature in accordance with this idea, Buchdahl suggests that the necessity of a particular law is conferred by reason and the reflecting power of judgement in placing that law in a unified system of laws of experience.[6] It is however obscure how such a procedure can confer empirical necessity to a particular law: how can simply relating one law to another, more general law make the first law necessary? It is of no use to say the more general law to which it is related is necessary, for then we still have the question of how this more general empirical law is itself necessary.

III

Michael Friedman, through careful attention to Kant's *Metaphysical Foundations of Natural Science* (MFNS), provides an alternative reading of the Second Analogy that attempts to defuse the *non sequitur* objection by urging that the conception of "judgement" involved in making causal judgements is an open ended process of subsuming lower level empirical laws

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[3] Friedman 1992, 169-170; Allison 1994, 291.
[4] Buchdahl 1969, 651-665. See also Allison 1994, 291 and Beck 1976, 385-9.
[5] Friedman 1992, 170ff. Kant is particularly clear on the necessity-conferring role of the understanding in the *Prolegomena* (Prol, AA 4: 304-6).
[6] Buchdahl 1969, 651-665; Friedman 1992, 194n11.

under ever higher empirical laws, ultimately in Newtonian mechanical laws that are necessary for nature as such.

MFNS provides a metaphysical foundation for physics, or the natural science of objects of outer sense. Kant argues that our cognition of the changes such objects undergo must be cognition of the relative motions of various of their parts. He accordingly defines matter as the moveable in space, from which it follows that it is the most general empirical concept, applying to all possible objects of outer sense. *In nuce,* Kant shows how quantities of matter together with the quantities of force and the center of mass of a reference frame can be rigorously determined from the various relative motions we observe under the assumption that the force of attraction is a universal, penetrating force.

The Universal Law of Gravitation, on this view, thus obtains a necessary status because running the given empirical data (the relative motions) through this procedure results in a unique and determinate description that encompasses all of these relative motions. This procedure, moreover, makes essential use of the three mechanical laws, which are the most general and abstract laws governing all empirically given (moveable) objects of outer sense and are grounded in the transcendental principles of the understanding. Friedman accordingly suggests that all empirical causal judgements are to be grounded in the transcendental principles in the same way: they, too, are supposed to be grounded in more and more general empirical laws, ultimately in the three mechanical laws governing the empirical concept of matter as the moveable in space, which in turn is immediately grounded in the transcendental principles.[7]

Allison raises a straightforward objection to this view: there are clear examples of judgements of objective temporal successions that do not require grounding in any knowledge of highly abstract causal laws to be made.[8] For example, correctly making the singular judgement that a ship is being driven downstream certainly does not require any detailed knowledge of the various gravitational and nongravitational forces acting on the ship. By inspection of the main argument in the Second Analogy, moreover, Kant clearly thinks such judgements already invoke the concept of causality. Thus, while the subsumptive activity Friedman identifies is clearly important for how Kant understands cognition of nature to work, it cannot be essential for particular empirical causal judgements as such.

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[7] Friedman 1992, 186.
[8] Allison 1994, 299.

IV

In my view, Kant's main point in the Second Analogy is that a mark by means of which one individuates any possible object of cognition can be none other than a change of perceptions that is not up to any finite empirical subject; moreover, some disarmingly simple reflections on this point establishes the necessity of particular empirical causal laws.

This point follows from observations Kant offers in the Anticipations of Perception, the introductory portion of the Analogies, and the First Analogy. "Experience" is "a cognition that determines an object through perceptions" (KrV, A 176/B 218). As such, it irreducibly involves perception or "consciousness … in which there is at the same time sensation" (KrV, A 165/B 207). As Kant observes in the First Analogy, consciousness is always consciousness through time, but we do not apprehend time itself, rather we apprehend a manifold of changing and persisting sensations within which temporal magnitudes can be defined (KrV, A 181-2/B 225-6). Objects of cognition are therefore to be found within this changing manifold of sensation. Therefore, any mark within consciousness by means of which we can first individuate such an object must be some characteristic way these sensations come to be and pass away that is not up to the whims of any subject.

In other words, because the contents of consciousness are exhausted by manifold changing sensations interrelated in so many ways, objective contents of consciousness—and hence truth apt representation of an object of experience—can only be a matter of whether the apprehension of the sensible manifold "stands under a rule" (KrV, B 236 – see also KrV, B 219 and A 197/B 242-3). There is simply nothing else for an object of experience to *be* other than "that in the appearances which contains the conditions of [a] necessary rule of apprehension", i.e., that which appears in some irreversible sequence of perceptions [A, B] (KrV, B 236). As Kant puts it when speaking "more precisely" about the relation of necessary orderings of perceptions to objects, in the synthesis of apprehension "there is an order of successive synthesis that determines an object [*Objekt*]" (KrV, B 246).[9,10]

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[9] See also the definition of "experience" as "empirical cognition, i.e. *a cognition that determines an object* through perceptions" at the beginning of the Analogies of Experience (KrV, A 176/B 218 – my emphasis) and the general summary of the Analogies: "All appearances lie in one nature, and must lie therein, since without this *a priori* unity no unity of experience, thus also *no determination of the objects in it*, would be possible" (KrV, A 216/B 263 – my emphasis).

[10] Longuenesse 1998, 335 is thus mistaken when she writes that, for Kant, "the succession in states of things [is] not directly perceivable. Rather, the representation we have of objective … succession is the result of the way we interpret the succession of perceptions in our apprehension." An irreversible sequences of perceptions is not

[A, B] therefore is an empirical mark that first determines any object of experience of a certain kind in the first place within consciousness.[11] Call this the *temporal individuating mark point*. The point is that such a mark is *necessary* for cognition of any object of experience; it is further *sufficient* inasmuch as one cognizes the object as "that first appeared in perceptible manner A, and then in perceptible manner B, such that this sequence was not up to me."

Of course, such a mark does not in general exhaust determinations we can make of any object, which is determined in many ways other than being perceptible in respectively manners A and B. But further reflection on the necessity of such a mark for individuating any possible object of experience suffices for establishing the necessity of particular empirical causal laws. Because such a mark is necessary for individuating any possible object of experience, the presence of such a mark is required for *further* determination of what any such object is actually like. That is, the only further determinations of an object individuated by mark [A, B] we could ever possibly make are those determinations that accompany actual instances of changes [A, B]. This is true both of any internal properties and of any relational properties holding of the object, i.e. includes what is characteristic of the circumstances in which these changes occur. If particular causal laws are characteristic ways such and such empirical objects change in such and such circumstances, therefore, empirical objects necessarily obey particular causal laws, because those ways of changing determine what those objects and circumstances are.

This result identifies a sense in which causality is a constitutive principle of nature that the *non sequitur* objection does not touch: it holds of all possible experience that the only really possible states preceding a characteristic kind of change actually proceed such a change.[12] The key point here regarding the *non sequitur* objection is that Kant is not trying to establish the

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something we "interpret" but is rather *forced* on us as perceiving, cognizing subjects confronted with an objective world, and we find upon reflection on such perceptions that this succession is what first constitutes what *things* are in the first place. Further, because there is *always* some irreversible sequence of perceptions in our temporally structured apprehension of the sensuous manifold, order indifferent sequences of perceptions are made possible against the backdrop of the objects that are presented to us through such irreversible sequences. Thank you to Jana Baum for drawing my attention to this issue.

[11] Here and in all following related uses, by "mark" I mean what Kant means, viz. that which mediates the application of a concept by being possibly common to many things, i.e. a repeatable (KrV, A 320/B 376-7). Thanks to Mathis Koschel for suggesting I spell this out.

[12] This reading finds further support in the "Postulates of empirical thinking in general," where Kant refuses to admit any addition to the possible beyond the actual because "[a]ll that can be added to my understanding … is connection with some perception or other; but whatever is connected with this in accordance with empirical laws is actual, even if it is not immediately perceived" (KrV, A 231/B 283-4). This indicates that, for Kant, the only really possible states connected to actually perceived states are themselves actual states, for example the actual states objectively preceding the perceived states, just as I advance here.

"uniformity" of phenomena of kind [A, B] from a single instance of a phenomenon of kind [A, B], that is, is not trying to establish that all As are followed by a B from one instance of a B following an A.[13] Rather, A and B are each partial determinations of objects, and only in phenomena of kind [A, B] can we find any further material for our cognition of objects undergoing a change of kind [A, B].

It is worth elucidating the view with a brief example: chairs, the thought goes, necessarily support a sitting human being of average size and weight because if something does not support such a human being, it is not a chair. Perhaps, as seems likely if one mistakenly believed the object was a chair, it shared some perceptible properties with prior chairs but did not behave in the manner constitutive of chairs, but rather e.g. collapsed as one released the weight of her body upon it. Cognition of such behavior allows us to form related empirical concepts and learn possible ways for their objects to be through further reflection on cases individuated by those related marks, for example "broken chair" or "chair imitation." If, on the other hand, something does support one's weight, we can come to understand and know more about what chairs are like by making further determinations of what accompanies the irreversible sequence of perceptions in virtue of which the perceived thing is a chair in the first place.

V

The above view is textually well supported and avoids the straightforward textual and philosophical objections to the two main existing attempts to avert the *non sequitur* objection reviewed above. Improving on existing looseness of fit views, it allows us to see how and in what sense particular causal laws of nature are necessary and finds the understanding conferring this necessity through the *a priori* logic of how sensuous objects of cognition can be individuated in the first place. Improving on Friedman's Newtonian view, it does not make competent exercises of causal judgement implausibly dependent on knowledge or explicit understanding of highly abstract, highly general empirical laws of nature. Moreover, it finds a sense in which causality is a necessary principle of nature that survives the *non sequitur* objection. There is, however, an additional point on which this objection is instructive.

As we have seen, Kant is not trying to establish that all As are followed by Bs from a single instance of such change, when A and B are perceptible determinations of an object. However, he *does* seem to advance that every change [A, B] follows with necessity from the

[13] Lovejoy 1967, 300-1.

preceding *state*—which is not exhausted by determination A but consists of a totality of such determinations (KrV, A 5721-575/B 579-604)—for example when he writes "if the state that precedes is posited, then this determinate occurrence inevitably and necessarily follows" (KrV, A 198/B 243-4). And this specific claim – call it Natural Determinism – indeed does not follow from the above identified sense in which causality is a necessary principle for nature.

To see this, consider some pair of distinct, mutually incompatible changes [A, B] and [A, C], with A, B, and C perceptible determinations. If Natural Determinism is true, then the states preceding the respective changes must be qualitatively distinct in some respect. Thus, there must be some further, mutually incompatible marks of the objects preceding the respective changes - call them *distinguishing marks* - the finding of which satisfies the principle of sufficient reason as regards reasons for qualitatively distinct changes having occurred (KrV, A 200-1/B 246; cf. KrV, A 217/B 264-5). Conversely, if there are always distinguishing marks to be found amongst states preceding mutually incompatible changes, Natural Determinism is true, as then every qualitatively distinct change follows upon a qualitatively unique state. But from the point that [A, B] and [A, C] are marks necessary for finding any further determination of the objects undergoing those respective sorts of changes, it does not follow that there will be distinguishing marks to be found for those two changes. We can always presuppose the existence of such marks so as to search for them, but nothing guarantees their existence until they are found.

The move from the temporal individuating mark point to Natural Determinism is thus indeed a *non sequitur*, but far from one of "numbing grossness"—it is easy to see how Kant could have made this *non sequitur* by reflecting on cognition of ordinary experience and reminding ourselves of the scientific context of Kant's time. When one discovers marks possessed by chairs that do not support one's weight but not possessed by chairs that do, or vice versa, one further *understands* those objects by means of empirical concepts one thereby forms. If "experience" is "a cognition that determines an object through perceptions" (KrV, A 176/B 218), one's experience is therefore straightforwardly expanded upon finding distinguishing marks preceding mutually incompatible changes, and frustrations of efforts to find such marks are correspondingly frustrations of efforts to have experience, in Kant's technical sense of the term, of those objects.[14] Absent an alternative model of further cognizing objects through

[14] Thus this analogy is valid of "the objects (of appearances) … merely **regulatively**" (KrV, A 180/B 222)—the marks whereby we come to understand an object *as* an object of experience are not immediately given in appearance

cognizing distinguishing marks for distinct changes, it is extremely natural to presuppose that all possible experience is made possible in precisely this way. Kant certainly had no such alternative, as the scientific paradigm of his time expanded our cognition of nature in precisely the manner just reviewed.[15] The *non sequitur* from the temporal individuating mark point to Natural Determinism is thus an extremely natural projection of the only model of how the only experience Kant knew was made possible into the future of scientific inquiry. The reading offered here therefore tightens the connection of the System of Principles to particular empirical laws of nature while providing a conception of such laws strikingly loosened from the physics of Kant's time: causality is constitutive of nature as such without nature being thereby constituted as deterministic.[16]

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as such—, and makes experience as "empirical cognition, i.e. a cognition that determines an object" possible in the first place (KrV, A 176/B 218).

[15] There are always distinguishing marks for qualitatively distinct changes as we progressively cognize nature in accordance with Newton's three mechanical laws and Universal Law of Gravitation in that one can always find a frame of reference in which distinct accelerations of given objects in that frame are found to be preceded by different spatial relations of those objects to the distribution of masses of those objects, thus in which distinct changes of motional states of given objects in that frame are preceded by qualitatively distinct determinations of those objects. (This frame, these accelerations, and the mass distribution are all determined together – see Friedman 2013 for more.)

[16] An avenue for further research is thus attempting to synthesize the conception of laws of nature extracted from Kant's thought here with indeterministic views of quantum physics. For the beginnings of a reading of Niels Bohr as a misunderstood realist offering a neglected such view, see Hall 2024.

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