

## A REBUTTAL TO A CLASSIC OBJECTION TO KANT'S ARGUMENT IN THE FIRST ANALOGY

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*Abstract: Kant's argument in the First Analogy for the permanence of substance has been cast as consisting of a simple quantifier-scope mistake. Kant is portrayed as illicitly moving from a premise such as (1) at all times, there must exist some substance, to a conclusion such as (2) some particular substance must exist at all times. Examples meant to show that Kant makes this mistake feature substances coming into and out of existence, but doing so at overlapping times. I argue that Kant offers an argument against this kind of example in the following passage. Kant's claim is that, were substances to be created and destroyed as in the example, the appearances would then be related to two different times, in which existence flowed side by side, which is absurd. For there is only one time, in which all different times must not be placed simultaneously but only one after another (A188–9/B231–32).*

Classically, Kant's argument in the First Analogy for the permanence of substance has been cast as consisting of a simple quantifier-scope mistake. On this line, Kant is portrayed as illicitly moving from a premise such as (1) at all times, there must exist some substance, to a conclusion such as (2) some particular substance must exist at all times. The kind of example that is often given to demonstrate the invalidity of this argument is one in which multiple substances *overlap* in time. For example, Van Cleve (1979) offers a case in which one clock exists only from time A to time B and another exists only from time C to time D. He then suggests that, so long as a third clock exists from some time between A and B to some time between C and D, there is never a time at which no substance exists; so 1 is true, while 2 is not, and the problem that Kant is addressing (how we represent the unity of time) is solved without making the above fallacious inference.

I will argue here that this kind of example cannot be used against the theory that Kant offers in the First Analogy because he presents a cogent argument against it in the following brief passage. Kant's claim is that, were individual substances to be created and destroyed as in the example,

*the appearances would then be related to two different times, in which existence flowed side by side, which is absurd. For there is only one time, in which all different times must not be placed simultaneously but only one after another.* (A188–9/B231–32, emphasis added)<sup>1</sup>

I will explain precisely what Kant intends by this somewhat cryptic remark farther on, but the gist of the point that he is making is that, in the kind of situation that Van Cleve is imagining, in which there are *two* substances that overlap in time, since we mark time via the changes in substance, marking time on two substances would leave us with two incommensurable timelines, two different measures of time that it would be, in principle, impossible to coordinate. Kant concludes that the need to represent all of time as a unity requires that one represent the world as consisting of a single sempiternal substance that can never be created or destroyed because only a *single* such substance can provide the *single* standard needed on which to mark this time. Since substance is the only possible *standard* of marking time, there can be only *one* such standard. The only way to ensure that there is only a single standard is to guarantee not only that there can be no time at which no substance exists but also that no *two* substances can ever “coexist.” Thus, to represent time as a unity, we must represent the world as consisting of a *single*, sempiternal substance (that is never created or destroyed). My conclusion will be that Van Cleve importantly misunderstands the *kind* of unity that Kant aims to explain in the First Analogy. Van Cleve understands this unity as merely the unity of different times: the past, the present, and the future. While those are certainly included in the scope of Kant's argument, he is also concerned with the more general unity appropriate to a *single measure* of time's passage. This more general kind of unity undermines the possibility of Van Cleve's counterexample and makes Kant's argument in the First Analogy more powerful than has previously been supposed. So, Kant does not commit the simple quantifier-scope fallacy that Van Cleve attributes to him because he derives (2) directly from the thesis that we must employ a single standard of time's measure. If substances could be created or destroyed, we would have “gaps” in time; and, if more than one substance could exist, we would have competing standards of the measure of time.

My procedure here will be as follows. First, I will give a brief summary of the conclusion at which Kant is aiming in the First Analogy and a barebones reconstruction of his argument for this conclusion. Then, I will present an example that Melnick (1973) offers as a way of illus-

trating Kant's point, which, in turn, becomes the subject of Van Cleve's critique. I will then show that the objection that Van Cleve presents is, as Kant contends, absurd because it calls for a situation in which time would be measured by *two* competing standards. Finally, with Kant's argument secured against Van Cleve's counterexample, I will return to Kant's conclusion and explain how it is to be understood properly. I will there suggest that understanding Kant's argument as I do points to an interpretation of 'substance' not as a first-order concept of a special kind of object but rather as a metalevel regulative principle governing the acceptability of potential first-order object-concepts.

For now, though, to understand Kant's response to Van Cleve's kind of counterexample, we must begin with the argument to which Van Cleve objects, and, to do that, we must examine the conclusion at which Kant aims in the First Analogy. Essential to Kant's conclusion is his distinction between change (*Wechsel*) and alteration (*Veränderung*). A change, as Kant understands it, is the event of something's coming to be or ceasing to exist. "Change" refers to an event that marks a difference in the *ontological* makeup of the world. In autumn when the green of a leaf ceases to exist and its orange begins to exist, the *color* of the leaf appears to change. Alteration, on the other hand, is "a way of existing that succeeds another way of existing of the very same object" (A187/B230). So, while the *colors* of the leaves appear to change—the green ceases to be, and the orange comes to be—relative to these colors, the *leaves* undergo alteration. They exist first as green and then as orange. Kant's thesis in the First Analogy is that all *ostensible* change, all seeming ontological difference, is actually mere alteration. Strictly speaking, there are no changes in the world; nothing comes to be or ceases to be: there are only alterations of the one, sempiternal substance:

All appearances contain that which persists (substance) as the object itself, and that which can change as its mere determination, i.e., a way in which the object exists. (A182/B224)

All apparent change is, in fact, mere alteration of the one, sempiternal substance. That is how Kant puts his conclusion in the first edition.

In the second edition, Kant rephrases his conclusion to make clear that the ontological changes that he intends to rule out involve only the coming to be and ceasing to be of quantities of substance. So, the apparent ontological changes in the colors of the leaves are merely apparent. Such apparent changes ought to be reconceived to be not ontological changes in the quantity of substance in the world but rather mere alterations of the *determinations* of substance:

In all change of appearances substance persists, and its quantum is neither increased nor diminished in nature. (A182/B224)

Kant's thesis in both editions is the same—that all apparent change is, in fact, alteration of the one sempiternal substance—but what is instructive in the second-edition idiom is that there Kant is explicit that the ontological change that he will argue is impossible is one in which the *quantum of substance* in nature is altered. That is, Kant's conclusion will be that all ostensible change in the amount of substance in the world is, in fact, a mere alteration of the one sempiternal substance. So, in the examples above, while what *properties* there are in the world change—first there is green, then there is no green, but there is orange—such “changes” do not count as ontological in the relevant sense. Kant's thesis does not concern the existence of properties (or other more obscure metaphysical entities for that matter) but only substance and only the quantity of substance that exists. Again, that thesis is that this quantity can never change and that all apparent ontological change (in this sense), for example, the burning of a piece of wood, is merely an alteration of the one sempiternal substance that itself never increases or diminishes in its quantity.

To see how Kant arrives at this audacious conclusion, it will be helpful first to consider a quick reconstruction of his argument, along with the classic objection to this version of the argument. It will turn out that Kant himself has already considered this objection and has a telling response to it. So, here is a quick-and-dirty version of Kant's argument in the First Analogy.

1. We must represent time as a unity.<sup>2</sup>
2. Time itself is not perceived.<sup>3</sup>
3. Therefore, one can represent time only by *marking* time on the objects of experience.<sup>4</sup>
4. Therefore, to represent time as a *unity*, one must mark time on a unitary substance.<sup>5</sup>
5. Therefore, we must represent the world as containing a single, sempiternal substance (which is neither created nor destroyed, and of which apparent changes are actually mere alterations).

The idea here is that, since the only way to represent time is by representing the changing states of the world, if one is to be able to represent time as a unity, there can never be a time at which nothing exists. Were such a state to come to pass, the timeline that was marked on the objects before this state and the timeline that would be marked after it could not be related to one another by any intermediate time because there would, *ex hypothesi*, be no objects in existence during this intermediate span on which to mark the time between the end of the previous

timeline and the beginning of the new one. So, there can be no time at which nothing exists. Melnick offers the following example to illustrate the point, to which we will see Van Cleve object in a moment:

Suppose that the action (mechanism) of an ordinary face-clock is used to determine the magnitude of a time interval  $t_1$  to  $t_2$ . We assume that at time  $t_1$  the hands on the clock read 4:00 A.M. and that at time  $t_2$  the hands on the clock read 4:05 A.M. We thus measure the time interval  $t_1$  to  $t_2$  as the time it takes for the action (the mechanism) to move the hands of the clock from a 4:00 reading to a 4:05 reading. Suppose that the clock that reads 4:00 at  $t_1$  does not have an uninterrupted existence up to time  $t_2$ , i.e., suppose we have the following situation: At time  $t_1$  clock A reads 4:00. At time  $t'$  between  $t_1$  and  $t_2$  clock A goes out of existence. At some time  $t''$  between  $t'$  and  $t_2$  (where  $t''$  does not equal  $t'$ ) clock B comes into existence and at  $t_2$  clock B reads 4:05. In order to determine the time interval between  $t_1$  and  $t_2$  we must be able to determine the interval between  $t'$  and  $t''$ . It will not do in determining this interval to say, e.g., that since the last reading of clock A (at  $t'$ ) was 4:02:25, and the first reading of clock B (at  $t''$ ) was 4:02:27, that the interval  $t'$  to  $t''$  was 2 seconds. . . . Thus, there can be no interval no matter how small (because we could not determine how small) between the times  $t_1$  and  $t_2$  at which there is a lacuna in the mechanism, if this mechanism is to be that in virtue of which we determine the magnitude of the interval  $t_1$  to  $t_2$ . (Melnick 1973, 66)

Since there is no substance in existence between  $t'$  and  $t''$ , there is no way to mark the interval that passes between these two times. Thus, Melnick earns for Kant the conclusion that, to represent time as a unity, there must exist, at all times, some substance. As Van Cleve astutely points out, however, this principle is not the same as, and does not imply, the principle that, to represent time as a unity, there must exist some *single* substance that exists at *all* times. That is, it seems that, if the kind of example that Melnick presents is *all* that there is to Kant's argument, then Kant is guilty of a simple confusion regarding the scope of his quantifiers. Van Cleve proposes the following counterexample to make this clear.<sup>6</sup>

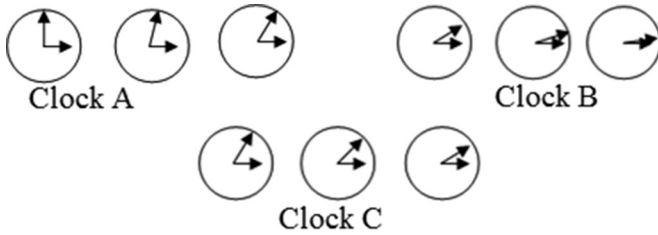
We could still measure the interval from  $t_1$  to  $t_2$  provided there were *another* clock that existed, say, from 4:02 until 4:03. This would enable us to verify that all three clocks were synchronized and to measure the interval from  $t'$  to  $t''$  by means of the third. (Van Cleve 1979, 158)

In this example, at every time there exists a clock by which to mark the time, but it is not the case that any *single* clock exists at *all* times, and it does not seem that there is any reason to believe that some such sempiternal clock *must* exist in order to bridge the gap in Melnick's example.<sup>7</sup>

Despite its initial plausibility, Kant seems to have anticipated this kind of example and provided an argument against this sort of objection:

Substances (in appearance) are the substrata of all time-determinations. The arising of some of them and the perishing of others would itself remove the sole condition of the empirical unity of time, and the appearances would then be *related to two different times*, in which existence flowed side by side, which is absurd. For there is only one time, in which all different times must not be placed simultaneously but only one after another. (A188–89/B231–32, emphasis added)

Call the interposing clock from Van Cleve's example Clock C. In that example, we mark time first on the Clock A, then on both Clock A *and* Clock C for some time, then just on Clock C, then on Clock C and Clock B for some time, then on just Clock B. The situation would look something like this:



The argument that Kant quickly articulates in the above passage concerns what we are to make of the intervals in which we are marking time on two different clocks: “the appearances would then be related to *two different times*, in which existence flowed side by side, which is absurd.” One way of understanding the problem that Kant is anticipating here is one of *coordination*.<sup>8</sup> If time is being marked on two different clocks, or substances, then we have no criteria by which to judge that a time being marked on, for example, Clock A is *the same time* that is being marked on Clock C. What we are tempted to say is that the hands on Clock A pointing to 4:02 occurs *at the same time* as the hands on Clock C pointing to 4:02, but this is to make precisely the mistake against which Kant warns: if the *only* way we have to mark time is by those clocks, then to claim that the positions of the clocks match at a time is to say more than just that two *events* occur at the same time (the hands pointing to the same numbers). Since these events themselves are the *only measures of time that we have*, this would be to claim that two *times* occur *at the same time*, which, as Kant points out, is absurd.

By way of illustration, consider the infamous meter stick in Paris that serves as the standard against which all lengths are measured. In the classic example, a meter is *defined* as whatsoever is the length

of that particular stick.<sup>9</sup> So, just as time cannot be marked except by the changing of substance, in this example there is no way to measure length independently of the meter stick. To see the absurdity to which Kant alludes in the above passage, consider a scenario in which there was not one such meter stick but two. This would mean that a meter would be defined as whatsoever is the same length as those *two* sticks. An example will help to bring out the absurdity of this situation. Consider a length of string that was first held up to one of these meter sticks and then against the other. Suppose further that the string measured exactly one meter according to the first stick. It is, then, one meter long. Now consider, however, what happens when we go to hold the string up against the second meter stick. Either it too will measure the string as being a meter long, or it will not. Suppose, for example, that, according to the second meter stick, the string is half a meter long. It is, then, half of a meter long. Of course, what one is tempted to say here is that the two sticks are of different lengths. If, however, length itself is measured *only* by comparison with these two sticks, then that is not a thesis that is available: they are each, by definition, one meter long. So, in this case, the string would be two different lengths. Surprisingly, things are not much better in the alternate case, where the string measures a meter according to both sticks. In that scenario, while the length of the string can be measured consistently, that it can is, in some sense, entirely *contingent*. That is because, as we have just seen, while there is a sense in which the two meter sticks are necessarily the same length, one meter, there is another sense in which this is entirely an accident. It *could* have been the case that the string was measured differently by each meter stick, and this contingency itself is absurd. Most importantly, however, each of these absurdities follows from the more basic one that is the analog of Kant's claim about time: namely, that *the* length of a given magnitude would be determined by *two different standards*. The very idea of a *standard* of length against which all other lengths are measured itself precludes the idea of having *two* such standards.

Back to the clocks, if time can be represented only via the alterations of substance, then in the situation that Van Cleve describes, in which he suggests we could represent time via *overlapping* substances, each such substance would have to serve as something like the meter stick. We would then, however, be left in the situation as above: we would have *two* standards against which to judge time—Clock A and Clock C—and no way to reconcile, even conceptually, the times that they each deliver. It would *make no sense* to say that Clock A reads 4:02 at the same time that Clock C does in just the same way that it would make no sense to say that a string measured against one meter stick measures the same

(or different) on another. Length is measured *against those sticks*; time is marked *on those clocks*; each stick is *necessarily* one meter long; each clock *necessarily* reads 4:02 at 4:02. There is no sense to be made of both readings occurring at the same time because there is no standard of time *apart from those clocks*.

Thus, if we are to employ a single standard of the measure of time, we must suppose that there is a single substance that exists at all times. *Per impossibile*, if there were more than one substance existing at a time, then we would have two competing standards of the measure of time and, thus, two in-principle incommensurate measures of time. It would, in such a scenario, be impossible to coordinate the time of an event as measured against one substance with the time of another event as measured against the other. Again, “the appearances would then be *related to two different times*, in which existence flowed side by side, which is absurd. For there is only one time, in which all different times must not be placed simultaneously but only one after another.”

Thus, Kant’s argument does not proceed via a simple mistake in the scope of his quantifiers from a step that establishes that (1) every apparent change is a mere alteration of some substance to the conclusion that (2) there is some single substance of which every apparent change is a mere alteration.

Rather, Kant concludes that the need to represent all of time as a unity requires that one represent the world as consisting of a single sempiternal substance that can never be created or destroyed because only a *single* such substance can provide the *single* standard needed on which to mark this time. If substance is the only possible *standard* of marking time, then there can be only *one* such standard. The only way to ensure this is to guarantee not only that there can be no time at which no substance exists but also that no *two* substances can ever “coexist.” Thus, to represent time as a unity, we must represent the world as consisting of a *single*, sempiternal substance (that is never created or destroyed).<sup>10</sup>

To return to the rough version of Kant’s argument above, the line of reasoning that we have been pursuing validates the inference in that argument from (3) therefore, one can represent time only by *marking* time on the objects of experience to (4) therefore, to represent time as a *unity*, one must mark time on a unitary substance, on the grounds that the *unity* of time that is required is not only the unity of earlier times with later ones but also the more general unity appropriate to representing a *single* continuous timeline (rather than one with multiple “concurrent” branches, which, as Kant points out, is absurd).



Given that we can represent time only by marking it on the objects of experience, representing this more general kind of unity does, in fact, require a *single* substance that acts as the single standard on which we do just this.

Having defended Kant's argument against the charge of invalidity, a word is again in order regarding how to understand his conclusion. We can, of course, in more ordinary circumstances, represent two clocks as displaying the same reading at the same time. Kant's thesis is that we do so by representing the movements of both of those clocks against the background of the single, sempiternal substance. This, however, seems odd, as one might expect that, if this is what we are doing when we synchronize clocks, we would know about it and Kant would not have to offer an argument demonstrating that this is necessary. Furthermore, this conclusion appears odd because Kant says nothing about, and we seem to know nothing about, what this single, sempiternal substance is or is like. It is not as if we have one clock here, another there, and hold them both up against substance to make sure that they each display the same reading at the same time. One may wonder, then, for what exactly Kant takes himself to have argued.

What the First Analogy calls for is that we represent all apparent ontological change as the mere alteration of the one sempiternal substance, and while this can certainly look like a demand for representing substance as a kind of object distinct from, say, the colors of the leaves or the wood that is burnt or the clocks that may come and go, it is not. What I want to suggest is that we represent substance not by forming a representation that is *distinct* from the representation of ordinary objects but by representing these objects *as* alterations of substance. O'Shea (1996, 73) puts it nicely:

The reference to permanent substance is not a reference to some further content posited behind or beneath the changing contents of perception (the 'accidental determinations' of substance). Rather, the concept of substance is the rule that the changing contents encountered in sense experience must themselves be conceived as the successive constitutive characters of an identical substance that persists through such changes.

The way that we represent this sempiternal substance, without knowing its nature, is by committing ourselves to the *rule* prescribed by the First Analogy: that all apparent change be represented as the mere alteration of such a substance. One feature of such a rule is that the single, sempiternal substance of which all apparent change is merely an alteration cannot be represented other than as subject, that is, it

cannot be predicated of anything else. The converse of this principle is at least equally important. If a potential substance *can* be predicated of something else—the color green can be predicated of the leaf—then it is not a genuine substance. Similarly, if a potential substance can be created or destroyed—the piece of wood can be burnt—it is likewise not a genuine substance but a mere alteration of genuine substance. What Kant argues in the First Analogy is that we are committed to representing the world as consisting of a single, sempiternal substance and that we do so by committing ourselves to rules corresponding to these conditionals, which constrain the picture of the world that we thereby form.

Here is Kant noting that this is an important difference between the results of the Analogies and the other Principles: while the other Principles deliver rules that are constitutive of what it is to represent an object, the Analogies deliver only regulative imperatives about what such representations creatures like us ought to use:

Things must be entirely different with those principles that are to bring the existence of appearances under rules *a priori*. For, since this existence cannot be constructed, these principles can concern only the relation of existence, and can yield nothing but merely regulative principles. (A179/B221)

Kant's point here is that, whereas the Axioms and Anticipations straightforwardly determine what it is for a representation to be a representation of an object at all—they must represent something of a determinate quantity and quality—because the Analogies deal with the relations *between objects* (or, strictly speaking, alterations of substance), they are not *constitutive* of such representations but rather *regulative*. The Analogies provide rules for the *adequacy* of our representations of the world. Thus, we do not represent substance itself, but rather we represent the manifold of appearances as alterations of substance, and we do this by subjecting the object-concepts that we use to the above rules.

It will be instructive to contrast briefly Kant's understanding of the representation of substance with that of a philosopher who demands that any such representation be fully determinate. So, consider that, for Hume, a complex idea represents the impressions of which its simple components are copies as being arranged in the same way that the complex idea is arranged.<sup>11</sup> Since all such complex ideas must be fully determinate, whatever they represent must likewise be fully determinate. For example, every idea of a triangle, because it is itself a triangle, must be either an idea of an isosceles triangle, an idea of an equilateral triangle, or an idea of a scalene triangle. This is because the relations that structure mental representations, for Hume, are the same relations that structure the objects thereby pictured.

'Tis a principle generally receiv'd in philosophy, that every thing in nature is individual, and that 'tis utterly absurd to suppose a triangle really existent, which has no precise proportion of sides and angles. If this therefore be absurd in *fact and reality*, it must also be absurd in *idea* (T 1.1.7.6; SBN 19–20)<sup>12</sup>

Kant does not similarly commit himself to this impoverished account of mental representation and so is not similarly committed to the full determinacy of representation. I have argued elsewhere that Kant, like Hume, also holds a kind of picture theory, but one according to which the relations among the objects of representation are pictured via the inferences to which one is committed in virtue of the judgments one makes about those objects.<sup>13</sup> This leaves room, where Hume's theory does not, for indeterminate representation. One can commit oneself to an object's being a triangle without also committing oneself to its being any particular kind of triangle (although one will still be committed to its being either isosceles, equilateral, or scalene). If one holds that some object is a triangle, one is thereby committed to its having three sides, its having three angles, the sum of its angles adding up to one hundred and eighty degrees, and so forth. That is what the content of the concept "triangle" entails. One is not, however, thereby committed to its sides all being of equal length and such. Thus, the rules for representing an object as a triangle form a picture of the world that is indeterminate with respect to what kind of triangle there is. And there is nothing problematic about that in the way that there is on Hume's account.

Returning, then, to the representation of substance, what is needed to form such a representation, to form a picture of substance, is not a fully determinate representation that pictures precisely every feature of this substance but rather a set of rules of inference that relate the representations of elements of this substance to one another in a way that is adequate for representing the relevant features of this substance. In this case, those relevant features are that all alterations are alterations of it, that it is never created or destroyed, and that time is marked against it. The first of these features manifests itself in a purely formal way: anything other than substance can be predicated of something else, while substance itself can ever be represented only by the subject of a judgment. The second is manifested by a commitment to a blanket forbearance of the judgment "there exists a time at which substance does not exist" and its consequent conclusions regarding what is and is not a substance. The third is manifest in the commitment to the principle that all the alterations against which we mark time are the alterations of the single sempiternal substance. These inferential commitments together constitute the representation of substance for which Kant argues in the First Analogy. They together form a picture of the world as consisting of

a single sempiternal substance that is never created or destroyed and of which all apparent change is actually an alteration. What follows from them is that I represent two clocks as being synchronized by representing their movements as simultaneous alterations of such a substance (the details of which are the subject of the Third Analogy).

What I hope to have shown is that this is a precondition of representing the unity of time, of having a single standard of time's measure. That, in turn, as Kant points out, is itself a precondition of representing both *succession* and *simultaneity*, the full discussion of which occurs during the course of the Second and Third Analogies. There, then, one gets the full-dress explanation of how we represent two clocks as displaying the same thing *at the same time*. What the argument of the First Analogy shows is that these will necessarily presuppose that the changing displays of each clock are simultaneous alterations of the one sempiternal substance that is never created or destroyed.

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## NOTES

1. All quotations from the *Critique* are from Kant 1998.
2. "Different times are only parts of one and the same time" (A32/B46).
3. "Now time cannot be perceived by itself" (A181/B225).
4. "Consequently it is in the objects of perception, i.e., the appearances, that the substratum must be encountered that represents time in general" (A181/B225). This does not, strictly speaking, follow from (2). One way to arrive at (3) would be to offer an argument that the two options listed here—that time is perceived and that time is marked on the objects of experience—exhaust the possibilities for representing time. Kant does not offer such an argument, but we might at least grant him that these are the two most obvious live options and that the more obscure ones can be dealt with in turn.
5. "Consequently that which persists, in relation to which alone all temporal relations of appearances can be determined, is substance in the appearance, i.e., the real in the appearance, which as the substratum of all change always remains the same" (A181/B225). The objection that we are about to consider concerns the inference from (3) to (4).
6. Similar arguments can be found in Strawson 1966 and Bennett 1966, both of which can be dealt with in the same way as here.
7. Twenty years after he first posed his version of this objection, Van Cleve reviewed the extant responses on offer, primarily in Allison 1983 and Walsh

1975. Van Cleve (1999, 108) reports that he remains unconvinced by any of them:

I take the unity of time to consist in this: all events belong to one connected temporal order, which means that any two events are such that either one begins before the other or they are simultaneous. I cannot myself see any reason why the absence of permanent things would lead to the disunity of time.

I agree with Van Cleve that neither of these offers a compelling rebuttal of his counterexample. Further attempts to address his objection can be found in O'Shea 1996, Ward 2001, and Rosenberg 2005. I postpone addressing Ward's proposed solution to note 10 below because it will be helpful to have some of the apparatus developed in the meantime available for responding to it.

O'Shea argues that Kant is not susceptible to the quantifier-scope fallacy because, as he understands the First Analogy, Kant never moves from a premise asserting the existence of some substance—understood as a finitely enduring empirical object—to the existence of substance—understood as the single sempiternal matter of which all apparent change is a mere alteration. O'Shea's Kant is concerned with the latter notion of substance from the start. While O'Shea's reading does show that Kant does not commit a quantifier-scope fallacy, it does so only by postponing the question of whether Kant is *justified* in concerning himself with only the single sempiternal substance and not finitely enduring substances for the purposes of his argument in the First Analogy. (O'Shea refers the reader looking for an argument for what he calls the No Identity/No Duration Principle to a paper in preparation, which did not make it to completion. He revisits the issue in O'Shea 2012, 181–83 where he casts the No Identity/No Duration Principle as a specification of a more general principle defended as part of the Transcendental Deduction.)

Rosenberg offers a response to an objection such as Van Cleve's that is commensurate with the one offered here. Rosenberg's solution consists of a challenge to the objector to explain how to *coordinate* the times that are being marked on two different substances. What I add here is that the necessity of the objector's failure to meet this challenge stems from a confusion of the notion of a standard of time and that the unity appropriate to such a standard is the real driving force behind Kant's argument. (So, while Van Cleve is right that the unity of time consists in all events belonging to one connected temporal order, he overlooks an essential condition of that unity.)

8. Cf. Rosenberg 2005, 208–12.

9. Cf. Wittgenstein 1958, §50, although see also Kripke 1980, 55.

10. Ward 2001 makes a persuasive case that the goal of Kant's argument in the First Analogy is to demonstrate the necessary conditions for representing a single temporal continuum. He makes a mistake, however, in defending Kant's argument against Van Cleve-style counterexamples. Ward first considers a case in which a substance comes to be *ex nihilo* against the background of an otherwise continuous sempiternal substance. His objection to this scenario, which he takes to apply to the Van Cleve-style case without significant alteration, is as follows:

But, in order to acquire the idea of a passage of time which makes possible the experience of a change in the already existing appearance, the substance of *this* change must be considered permanent. That is, in order to be conscious of a duration in which the change to the already existing appearances takes place, the coming into being of the later states needs to be joined up to the going out of existence of the earlier state. In short, the change has to be conceived only as a change in the determinations of what must be acknowledged as permanent in the given appearance. (Ward 2001, 400)

It is difficult to see how Ward's response is not question-begging. He is surely right that, to represent the substance purportedly being created in the example as coming to be at a time, we must coordinate it with the permanent substance on which we are already *ex hypothesi* successfully marking time. Ward is also correct that doing this requires coordinating the appearance of the new substance with some alteration of the already existing one. (This is how we would know at what time the new substance makes its appearance.) What Ward adds to this, however, seems to presuppose his conclusion—that one can understand a purported change only as an alteration of this single sempiternal substance. What I offer here is a way to justify that presupposition by way of an appeal to the necessary conditions for implementing a single standard by which to mark time. Thus, we cannot represent the world as containing a new substance that comes into existence *ex nihilo* because then we would have two standards for marking time: the new substance and the world of “simultaneously” existing substances already in place.

11. Cf. Landy 2012.

12. I here cite Hume's *Treatise* in the standard way with book, volume, section, and paragraph numbers from Hume 2000, followed by page numbers from Hume 1974.

13. Landy 2009a and Landy 2009b.

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