

## The Tristram Shandy Paradox: Reply to Oderberg

Oderberg (2002b) is a series of criticisms of Oppy (2002). Oppy (2002) is, in turn, a series of comments on Oderberg (2002a). Oderberg (2002b) claims that he “can scarcely find one thing that [Oppy (2002)] says about [Oderberg (2002a)] ... that is not wrong or confused” (351). Restricting myself to the things that I said in Oppy (2002) about which Oderberg (2002b) passes comment, I propose to argue that, in quite large measure, it is actually Oderberg’s criticisms of my comments that are either wrong or confused. Moreover—and more importantly—I shall discuss some points of independent philosophical interest as I go along. (Perhaps it is worth noting that Oppy (2002) and Oderberg (2002b) were both prepared in great haste. This may well account for some of the errors that occur on each side.)

Before I can turn to Oderberg’s criticisms of Oppy (2002), there is some scene-setting to be done. *First*, the exchange is located in the context of a broader debate about the *kalam* cosmological argument. Oderberg (2002a:304) sets out the *kalam* cosmological argument as follows:

- (A1) An actual infinity cannot exist. (Premise)
- (A2) An infinite temporal regress of events is an actual infinity. (Premise)
- (A3) (Therefore) An infinite temporal regress of events cannot exist. (From A1, A2)
- (B1) A collection formed by successive addition cannot be actually infinite. (Premise)
- (B2) The temporal series of past events is a collection formed by successive addition. (Premise)
- (B3) (Therefore) The temporal series of past events cannot be actually infinite. (From B1, B2)
- (C) (Therefore) The temporal series of past events is not infinite. (From *either* A3 or B3.)
- (C1) (Therefore) The universe began to exist. (From C)
- (C2) Whatever begins to exist has a cause of its beginning to exist. (Premise)
- (C3) (Therefore) The universe has a cause of its existence. (From C1, C2)
- (C4) (Therefore) God exists. (From C3)

It is worth noting that, since (C) is supported by two lines of argument, an attack on the premises of only one of these sub-arguments is insufficient to disarm the overall argument. However, it is also worth noting that since A1 entails B1, these two lines of argument are not entirely independent. If it is allowed that it is possible to have actually infinite collections formed by successive addition then, *a fortiori*, it must be allowed that it is possible to have actually infinite collections.

*Second*, the debate focuses on the contention that “the Tristram Shandy paradox” bears somehow on (B1), i.e. on the claim that no collection formed by successive addition can be actually infinite. Since a large part of what is at issue concerns the bearing that “the Tristram Shandy paradox” does have on (B1), I shall say no more about this matter in these initial remarks. (Of course, *proponents* of the *kalam* cosmological argument *must* deny that the Tristram Shandy stories provide logically possible cases of actual infinities formed by successive addition. But it is a matter of

contention whether there is anything that *opponents* of the *kalam* cosmological argument are *required* to say about these stories.)

*Third*, to set this general framework in its proper perspective, I think it can fairly be said that Oderberg claims that *all* versions of the Tristram Shandy story are logically inconsistent, or preposterous, or absurd, or involve violation of some self-evident truth, whereas I claim that it is at least a genuinely open question whether this is so. *I* claim that reasonable, reflective and well-informed people can reasonably refuse to endorse (accept) the claim that *all* versions of the Tristram Shandy story are logically inconsistent, or preposterous, or absurd, or involve violation of some self-evident truth, whereas Oderberg denies that this is so. (Perhaps it is worth noting that there is a serious question whether any of the variants of the Tristram Shandy story gives rise to *paradox*. While I shall continue to use the expression “the Tristram Shandy paradox”, I think that a good case can be made for the contention that the label “the Tristram Shandy story” should be preferred. Also, since there are many variants of “the Tristram Shandy story”, it is potentially misleading to continue to use this definite description; however, vigilance should ensure that we don’t go wrong even if we continue to use the traditional label for what is really a family of stories.)

## 1

Oderberg (2002a:307) writes that “an actual infinity ... has to be given all at once or not at all, and by ‘all at once’ it is meant ‘simultaneously’”. I claimed that this isn’t right: “the most that could sensibly be required of an infinite library is that some infinite sub-part of the library is ‘given all at once’” (Oppy (2002:336). Oderberg (2002b:351) replies: “No, my claim is that actually infinite collections must be given all at once—that’s all. I have no idea why Oppy prefers to talk about infinite sub-parts, and he does not enlighten us”.

It’s true that I didn’t explain why the qualification is required. But that’s because I took it that it is obvious why some qualification of Oderberg’s claim is required. Ironically enough, the qualification is foreshadowed in Craig (1979: 34): “The only way a collection to which members are being successively added could be actually infinite would be for it to have an infinite “core” to which additions are being made.” While Craig himself argues that, in the case of an infinite library, there could be no additions to the infinite “core”—cf. Craig (1979:14) “These illustrations show that if an actual infinite could exist in reality, it would be impossible to add to it”—this is a separate consideration about which Craig seems to me to be mistaken.

Suppose that we have an infinite library, ‘given all at once’. The library has a front face 100 metres across and 10 metres high. (The entry to the library is through a door in the front face.) The library extends ‘to infinity’ with cross-sections in the shape of similar rectangles, and contains a series of shelves of books, each of which extends to infinity. There are no buildings within a kilometre of the three sides of the building that are adjoined by land. (Of course, since the library ‘extends to infinity’, it has no fourth side.) There is nothing to stop us from making finite extensions to the library, adding on new wings to the three sides of the building that adjoin unoccupied land, or adding another storey to some finite segment of the building extending back from the front face. So let us suppose that we do this, and that we house books in these

extensions. Then our library is still an actually infinite library, but it is no longer true that it was ‘given all at once’. I take it that these considerations show that *some* qualification of Oderberg’s remark is required. However, I now think that my previous proposal wasn’t quite right, and I offer the following in its stead: the *most* that can be sensibly required of actually infinite collections (by someone like Oderberg) is that any actually infinite is “given”—i.e. generated by contributions—on no more than finitely many distinct occasions.

## 2

Oderberg (2002b:351) claims that “it is misleading to separate the original Tristram Shandy paradox into TSP<sub>1</sub> and TSP<sub>2</sub>”. ... There are two aspects that need to be distinguished and understood, but not two paradoxes.” I think that this is plainly wrong.

First, there is no doubt that TSP<sub>1</sub> and TSP<sub>2</sub> *are* different stories. According to TSP<sub>1</sub>, Tristram Shandy takes one day to record one year of his life, and no part of his autobiography remains forever unwritten. According to TSP<sub>2</sub>, Tristram Shandy takes one day to record one year of his life, and his autobiography is *completed*. In each of these scenarios, it is assumed that Tristram Shandy is born on a particular day in the nineteenth century, and that he lives forever. The scenarios are different because, in the latter but not the former, it is assumed that there is some future time at which Tristram Shandy lays down his pen. I think that there is no doubt that, given that TSP<sub>2</sub> includes the assumption that there is a time at which Tristram Shandy lays down his pen, TSP<sub>2</sub> is simply incoherent (whether or not there can be actual infinities). However, if there can be actual infinities, then it is much less obvious—if, indeed, it is true at all—that TSP<sub>1</sub> is incoherent.

Second, the origins of TSP<sub>1</sub> and TSP<sub>2</sub> are different. TSP<sub>1</sub> derives from Russell (1903:358). We can quote the relevant passage in its entirety:

Tristram Shandy, as we know, took two years writing the history of the first two days of his life, and lamented that, at this rate, material would accumulate faster than he could deal with it, so that he could never come to an end. Now I maintain that, if he had lived forever, and not wearied of his task, then, even if his life had continued as eventfully as it began, no part of his biography would have remained unwritten. This paradox, which I shall show is strictly correlative to the Achilles, may be called for convenience the Tristram Shandy.

This passage makes it clear that, by “the Tristram Shandy paradox”, Russell means to refer *only* to TSP<sub>1</sub>. The “paradox” is that, even though it takes him a year to describe a single day of his life, if he lives forever, no part of his autobiography remains forever unwritten. (Note the continuation at p.359 in Russell’s text: “The Tristram Shandy proves that two variables which start from a common term, and proceed in the same direction, but diverge more and more, may yet determine the same limiting class (which, however, is not necessarily a segment, because segments are defined as having terms beyond them). ... For commonsense, it must be confessed, this is a most unfortunate state of things.” It is *not* part of this “paradox” that there is a time at which Shandy lays down his pen.)

On the other hand, TSP<sub>2</sub> derives from Craig (1979:33): “This brings to mind Russell’s account of Tristram Shandy, who, in the novel by Sterne, writes his autobiography so slowly that it takes him a whole year to record the events of a single day. Were he mortal, he would never finish, asserts Russell, but if he were immortal, then the entire book could be *completed* ...” (My italics.) I take it that it is just a misreading of Russell to suppose that *he* is committed to the claim that, in TSP<sub>1</sub>, Tristram Shandy *completes* his book (where *completion* requires that there is a time at which Russell puts his pen down, with no part of his life to that point unrecorded). There is nothing in what Russell writes that suggests that, were Tristram Shandy immortal, he would be relieved of his complaint that his work would never come to an end; for the core complaint actually is that work accumulates faster than Shandy is able to deal with it, and this core complaint is relieved if he is immortal. (Of course, it is this feature of the “paradox” that is emphasised by Russell in his subsequent remarks—cf. the above citation.)

Oderberg (2002a:310) remarks on Russell’s “canniness” in refusing to make an explicit equivalence between the claim that Shandy could come to an end and the claim that no part of his autobiography would remain unwritten. I suggested that “either Russell was merely careless in referring to TSP<sub>1</sub> as a situation in which Shandy ‘finishes’ his autobiography, or else Russell was unduly optimistic in expecting that his readers would happily extend the interpretation of ‘finishing’ an autobiography to include all situations in which no part of the autobiography remains forever unwritten” (Oppy (2002:345)). Oderberg (2002b:356) suggests that he would be happy to retreat from the suggestion that Russell was being “canny” in not making the explicit equivalence claim “whilst giving the impression to the incautious reader that he is making just such an equation” to the position that Russell is either “careless or confused”. As foreshadowed in the previous paragraph, I have changed my mind about the remarks that I made previously: I do not think that there is any reason to say that Russell was canny, *or* careless, *or* confused. Confusion enters the scene only with the account of Russell on Tristram Shandy in Craig (1979), or in some like-minded interpreter who influenced Craig.

### 3

Oderberg (2002a:310) claims that “as Craig himself says, [the relevant part of the *kalam* cosmological argument] assumes the possibility of an actual infinity, and questions whether it could be formed by successive addition. So let us assume that the future is an actual infinity ...” I pointed out that something has gone wrong here: if we are allowed to assume (even if only for the sake of argument) that the future is actually infinite, then, since the future is formed by successive addition (and necessarily so), there is no problem in reaching the conclusion that it is possible for actual infinities to be formed by successive addition. The one conclusion that I drew from this observation is that there is room for suspicion about the claim that Craig’s criticisms of the thesis that that it is possible that there is an actual infinity formed by successive addition are independent of his criticisms of the thesis that it is possible that there is an actual infinity. (Oppy (2002:338))

Oderberg (2002b:352) claims that this part of my discussion of Oderberg (2002a) involves a “perverse misunderstanding” of the dialectic between a supporter of the *kalam* cosmological argument and an opponent of that argument. “Oppy is wrong to

assert that ‘the envisaged scenario does indeed involve a logically consistent description of an actual infinity formed by successive addition’ (318): for the whole point of Craig’s (and my) criticisms is that such a scenario would not be logically consistent, or at least would involve the contravention of a self-evident truth.” But, in fact, I did *not* make the assertion that Oderberg attributes to me. What I wrote is this: “[I]t seems that—by their own lights—the envisaged scenario does indeed involve a logically consistent description of an actual infinity formed by successive addition, *provided only* that it is logically possible that there is an actual infinity, and that it is logically possible that the future is an infinity of this kind.” (Italics in the original!) If there is any perversion here, it surely lies in Oderberg’s misreading of what I wrote: it is egregious to infer that someone who has attributed a commitment to a conditional claim to some others has thereby attributed a commitment to the consequent of that conditional claim to those others.

It is perhaps worth pointing out that, despite Oderberg’s assertion to the contrary—Oderberg (2002a:301): “... as Craig himself says ...”—it is not actually the case that Craig (1979) says that the relevant part of the *kalam* cosmological argument assumes the possibility of an actual infinity, and questions whether it could be formed by successive addition. Rather, what Craig says is that no assumption is made that an actual infinity is impossible. (Craig (1979:30).) This is vastly different from holding that the assumption is made that an actual infinity is possible (still less, that the future is an actual infinity); and it does not lead to the problematic consequences that I judged to follow from Oderberg’s formulation. So I withdraw the claim that the discussion somehow casts doubt on Craig’s entitlement to suppose that his criticisms of the thesis that that it is possible that there is an actual infinity formed by successive addition are independent of his criticisms of the thesis that it is possible that there is an actual infinity. It is only on Oderberg’s inaccurate formulation of Craig’s view that this line of thought arises.

#### 4

Oderberg (2002b:352/3) claims that “neither Craig nor I offers the forwards case of TSP—i.e. TSP<sub>1</sub> or TSP<sub>2</sub>—as a proof that the infinite cannot be traversed, only that it is not a scenario which shows it can”. Moreover, he takes it that this remark somehow casts doubt on a “misleading analogy with taxi rides” that I bring up in my discussion of TSP<sub>2</sub>. “The fact that TSP<sub>2</sub> ‘would be inconsistent whether or not it involved an infinity formed by successive addition’ ... entails that it would be inconsistent even if it involved an actual infinity formed by successive addition; so it cannot be a case of an actual infinity formed by successive addition.” (353)

On the first point, I agree that neither Craig nor Oderberg offers TSP<sub>1</sub> as a proof that the infinite cannot be “traversed” (since, by their lights, there is no “traversal” in this case). However, it is worth noting that there is no-one—neither Russell, nor anyone else—who has supposed that TSP<sub>1</sub> is a scenario which *proves* that the infinite can be “traversed” (in the sense in which this term is understood by Craig and Oderberg). Those who accept a four-dimensionalist account of time typically see no reason why the future could not be actually infinite—and, moreover, an actual infinity that is formed by “successive addition”—but it is well known that Craig rejects the notion that there is “traversal”—or “successive addition”—if the four-dimensionalist account is true. As a proponent of the four-dimensional conception of time, I see no obvious

difficulty in the suggestion that TSP<sub>1</sub> provides a consistent model in which there is an actual infinity formed by “successive addition”—but, since Oderberg is no four-dimensionalist, he is hardly going to be persuaded that TSP<sub>1</sub> does provide such a model.

On the second point, it seems to me that Oderberg misunderstands my “taxi ride” analogy. The point of the analogy is just this: that since everyone can agree that TSP<sub>2</sub> is inconsistent, regardless of their views about the possibility of actual infinities and the possibility of actual infinities formed by successive addition, TSP<sub>2</sub> has *no* consequences for the debate about these matters. (The same point applies to TSP<sub>3</sub>, since it is also trivially inconsistent.) Defenders of the claim that there can be no actual infinities formed by successive addition do not need to say—and, indeed, cannot coherently say—that TSP<sub>2</sub> can be used to demonstrate the absurdity of the idea that there can be actual infinities formed by successive addition; and defenders of the claim that there can be actual infinities formed by successive addition do not need to say—and, indeed, cannot coherently say—that TSP<sub>2</sub> can be used to demonstrate that it is at least coherent to suppose that there can be actual infinities formed by successive addition. A story that everyone acknowledges to be inconsistent for independent reasons cannot be used to show anything at all about other controversial assumptions that are built into the story. (There is a caveat to be entered here. If there is no doubt that the other inconsistencies can be “quarantined”, then there are still things that can be done with explicitly contradictory stories. However, if the other inconsistencies can be “quarantined”, then the story can be rewritten without them—and, hence, of course, it should be so rewritten, to remove any grounds for doubt about why it is, for example, that the story is absurd.)

In my previous piece, I claimed that Craig (1979:33) recognises the point that TSP<sub>3</sub> is inconsistent for trivial reasons—“In reality, he could never finish, for every day of writing generates another year of work”—but still tries to go on to draw conclusions about the incoherence of substantive philosophical assumptions from the incoherence of TSP<sub>3</sub>—“Here we discern the bankruptcy of the Principle of Correspondence in the world of the real. ... [I]f the Principle of Correspondence were descriptive of the real world, he should have finished—which is impossible”. Oderberg (2002b:353) claims that it is a “non-sequitur” for me to insist that TSP<sub>3</sub> cannot be a *reductio* of the Principle of Correspondence where the ground that I offer for this insistence is that it—i.e. TSP<sub>3</sub>—is inconsistent whether or not that Principle is true. I do not think that I am the one who is mistaken here. However—anticipating later discussion in the present paper—I now think that Craig’s Tristram Shandy story is TSP<sub>8</sub> rather than TSP<sub>3</sub>, so that my previous claim is not correct in every detail. Nonetheless, the main conclusion that I drew continues to hold, since TSP<sub>8</sub> is also trivially inconsistent. Craig’s argument against the Principle of Correspondence is unsuccessful because the absurdities in the story in question cannot be pinned on that principle.

## 5

According to TSP<sub>3</sub>, Tristram Shandy has been writing since eternity past, and has just laid down his pen, having taken one year to describe each of the days of his life. About this case, I began by noting that, since it is trivially inconsistent—since it, too, includes the assumption that Tristram Shandy cannot write about a day after that day occurs—it can have no consequences for the debate about the logical possibility of

actual infinities formed by successive addition. I *also* noted that there are further problems with the discussions that Craig and Oderberg provide of this case; however, it should be clear that the initial point stands whether or not I am right about those further alleged problems.

Oderberg (2002b:353) objects to my claim that the assumption that Shandy can only report a day after it takes place all by itself entails that there can be no one-one correspondence between days and years-in-which-Tristram-Shandy-could-have-written-about-the-corresponding-days. He writes: “This is wrong: in the forwards case too Shandy can only report a day after it takes place but there is a one-one correspondence of the kind mentioned. The lack of correspondence in the backwards case is generated by Shandy’s writing from eternity past. And the inconsistency in both TSP<sub>2</sub> and TSP<sub>3</sub> is generated by Shandy’s getting infinitely far behind in his writing.”

I think that Oderberg is mistaken here. In both TSP<sub>2</sub> and TSP<sub>3</sub>, it is assumed that there is a day on which Tristram Shandy lays down his pen, having completed his autobiography. (This contrasts with TSP<sub>1</sub>, in which consistency is maintained by the insistence that there is no such day.) Consider *that* final day. Given that Tristram Shandy takes a year to record a day, and that he can only record a day after it happens, it follows—without any considerations about how long he has been writing (whether from eternity past or not)—that there is no year in which he could have recorded that day. So, first, there is *no* difference between TSP<sub>2</sub> and TSP<sub>3</sub> in point of the existence of a correspondence between days and years-in-which-Tristram-Shandy-could-have-written-about-the-corresponding-days. And second, it isn’t true that *the* inconsistency in both TSP<sub>2</sub> and TSP<sub>3</sub> is generated by Shandy’s getting infinitely behind in his writing. (Of course, the stories might be multiply inconsistent—and doubtless Oderberg thinks that they are. But given that all parties to the debate about the possibility of actual infinities formed by successive addition have *independent* reason to agree that the stories are inconsistent, there is just no mileage to be obtained by noting that the stories are inconsistent. In particular, Craig (1979:34) is just wrong when he claims that “What the Tristram Shandy story really tells us is that an actually infinite temporal regress is absurd.” For, whether the story to which Craig refers is TSP<sub>2</sub> or TSP<sub>3</sub>, this story is trivially inconsistent.)

## 6

According to TSP<sub>4</sub>, as in TSP<sub>3</sub>, Tristram Shandy has been writing from eternity past, and puts down his pen with no part of his autobiography unwritten. However, unlike in TSP<sub>3</sub>, in TSP<sub>4</sub>, Tristram Shandy is able to record the events of his life before they occur. Of course—as Oderberg (2002a:312) points out—one might well think that it is logically impossible for anyone to record the events of their life before it happens. But, if that’s right, then TSP<sub>4</sub> is clearly in the same category as TSP<sub>2</sub> and TSP<sub>3</sub>: it has no interesting consequences for the debate about the possibility of an actual infinity formed by successive addition. For the purposes of the following discussion, we suppose—at least for the sake of argument—that it is not logically impossible for some to record their futures before they occur.

Oderberg (2002a:312) claims that TSP<sub>4</sub> can only be mathematically consistent if there is “a point .. when Shandy is no longer writing about his future but about his past”. I

objected that this is false: there is no reason why TSP<sub>4</sub> shouldn't be taken to be a scenario in which, for each day of his life, Shandy records the events of that day before that day occurs, and on that understanding of TSP<sub>4</sub> it is mathematically consistent. (Oppy (2002:340) (Of course, TSP<sub>4</sub> is itself silent on this issue; without a compelling argument, there is also no reason why TSP<sub>4</sub> shouldn't be taken to be a scenario in which Shandy records some of the days of his life before they happen, and others after they happen. And, indeed, there are many mathematically consistent versions of TSP<sub>4</sub> with this character also.) Oderberg (2002b:354) claims that, in making this objection, I have changed the topic by "in effect anticipating TSP<sub>5</sub>". I cannot see how this is the case. On the assumption that it is logically possible for some to record their futures before they occur, then the only remaining question about TSP<sub>4</sub> is whether it violates some kind of necessarily true principle of sufficient reason. There is no further question of mathematical consistency of the kind identified in Oderberg (2002a). (Of course, Oderberg's favoured version of TSP<sub>5</sub> shares the same structure as the identified version of TSP<sub>4</sub>. But that's fine: *the* difference between TSP<sub>4</sub> and TSP<sub>5</sub> is that in the former scenario, Shandy *records* days before they occur, whereas in the latter scenario he merely *plans* days before they occur.)

(I can't help remarking in passing on the fact that, in his discussion of my remarks on TSP<sub>4</sub>, Oderberg (2002b:353f.) takes me to have been "confused" in failing to recognise that, when he wrote that "it is logically impossible for Tristram Shandy to record his own future", what he meant was that "it is logically impossible for Tristram Shandy to record his own future by means of natural knowledge or natural experience". Nor can I resist setting this against his later comment, at p.357: "Fine, I do not profess to have mind-reading abilities; I took [Oppy's] words at face value." Perhaps there is a tiny double standard at work here.)

## 7

Suppose that TSP<sub>5</sub> is taken to be the scenario in which Shandy puts down his pen at a particular time—say, midnight, December 31, 2001—having used his last year to plan his last day, his second last year to plan his second last day, his third last year to plan his third last day, and so on. Oderberg (2002a:315-7) claims that this story violates the Principle of Sufficient Reason—in the "weak" form that requires that every *event* has an adequate explanation—since there can be no reason why Shandy finishes when he does, rather than at some earlier time. I suggested that it might be the case that Shandy had always been destined to finish at midnight, December 31, 2001—and that, if this were so, it would provide an adequate explanation of why Shandy does not finish at some other time. (Oppy (2002:341f.)) Oderberg (2002b:354) objects that this is a "pseudo-explanation": "We can only know the state of Shandy's planning at any time because we already know when he has finished; so to try to explain why Shandy finishes when he does by appeal to the state of his planning, which we only know because we know when he finishes, would be to offer a paradigmatic example of a circular explanation—which is no explanation at all."

There are several points to make here. *First*, it is worth noting that it is important to be clear about what it is that is to be explained. Suppose, for example, that the question is "Why couldn't Shandy put down his pen at some earlier time, with no part of his life to that point unplanned?" *This* question has an answer: there was no earlier

time at which no part of Shandy's life to that point remained unplanned—and so, *a fortiori*, we have an explanation of why he couldn't put down his pen at some earlier time with no part of his life to that point unplanned.

*Second*, it is no objection to the point just made to claim—as Oderberg does—that we can only know the state of Shandy's planning at any time because we already know when he finished. Consider the state of Shandy's planning at midnight on December 31<sup>st</sup> 2000. At that point, he has planned every day up until December 30<sup>th</sup> 2001. At that point, we can calculate that, after spending the next year planning the day of December 31<sup>st</sup> 2001, his planning will “catch up” with his current state at midnight on December 31<sup>st</sup> 2001. So, a year before he finishes, we know that if he continues as he has since eternity past, his planning will “catch up” with his current state when it turns out to do so. Moreover—of course—this point is entirely general: at any time, we can calculate when Shandy's planning will “catch up” with his current state, provided that he continues to behave as he has done from eternity past.

*Third*, to remove any apparent air of “circularity”—while nonetheless ensuring that there is an explanation of why it is that Shandy puts down his pen at midnight on 31<sup>st</sup> December, 2001—it will suffice to suppose that Shandy has always had the *intention* to lay down his pen, with no part of planning to that point unfinished, at midnight on 31<sup>st</sup> December 2001. We can appeal to this intention to explain why his behaviour has been as it has from eternity past: he has a timetable that he is writing to, and nothing has intervened to prevent him from sticking to his timetable. Oderberg might object that there is something here that remains to be explained: namely, why Shandy has the intention in question. But we don't have any obligation to extend the story to provide an answer to this question; and, moreover, the insistence that every *event* has an explanation gives us no reason to think that any *complete* version of the story must have an answer to this question. (The state of Shandy's mind from eternity past has an aspect that lacks explanation; but states are not events. So Oderberg's favoured principle of sufficient reason—the version that he claims has been “the favourite of virtually all philosophers throughout history”—need not be violated in TSP<sub>5</sub>, despite Oderberg's repeated claims to the contrary: there is no *event* which lacks an adequate explanation in TSP<sub>5</sub>, unless *states* that lack adequate explanation are deemed to be unsatisfactory explainers.)

Oderberg (2002b) has several other objections to make of my discussion of TSP<sub>5</sub>. *First*, Oderberg takes issue with my claim that, just because a story contains an event that is not explained in the story, it does not follow that the story involves a violation of the Principle of Sufficient Reason. I say that, provided that there are consistent extensions (or expansions) of the story in which there is no violation of the Principle of Sufficient Reason, then there is no violation of the Principle of Sufficient Reason in the original story. Oderberg (2002b:354) appears to reject this suggestion, saying that extensions of a story are “alternatives” rather than “expansions”. Since Oderberg gives no reason for rejecting my proposal, I merely note again that it seems attractive to me.

*Second*, Oderberg takes issue with my claim that there are expansions of TSP<sub>5</sub> in which there is no violation of the Principle of Sufficient Reason (whence, by the claim of the previous paragraph, it follows that there is no violation of the Principle of Sufficient Reason in the original story either). My example was calculated to be one

from which Oderberg could hardly dissent: surely he will agree that we can consistently add to TSP<sub>5</sub> the claim that, at all times, God has freely willed that Shandy should “finish” his planning at midnight on December 31, 2001. Oderberg replies: “Forgive my confusion, but I thought I was supposed to be using the Tristram Shandy paradox to defend the *kalam* cosmological argument, and hence the existence of God, and that the argument’s critic were trying to do the opposite. Does Oppy now expect me to assume the existence of God in my discussion of the paradox? Or worse, does the opponent of the KCA want to make such an assumption? I think not.” I think that Oderberg is indeed confused. I claimed only that this is but *one* way in which the story can be consistently extended in the required way. There are many other consistent extensions of the required kind available: perhaps there is a perfectly evil being who has freely willed in the necessary way; perhaps there are powerful, created beings who made our world, and who are able to freely will in the necessary way; perhaps there are beings not vastly different from ourselves who have mastered the art of worldmaking, and who have engineered Shandy’s world to make it a world in which he accomplishes his task; and so forth. Moreover, even if—surely contrary to fact—all consistent extensions of the story require the assumption that God exists, it is not immediately clear how this impacts on the wider debate about the *kalam* cosmological argument.

This brings us to the *third* point of my previous discussion with which Oderberg takes issue. I claimed that if it turned out that it is possible that there is an actually infinite collection formed by successive addition iff God exists, then it would follow immediately that the *kalam* cosmological argument is unsound, which looks like a congenial result for Craig’s critics. (Cf. Oppy (2002:343) Oderberg (2002b:355) replies that “The reason the critics should not find [this result] congenial is that it would mean refuting the *kalam* cosmological argument by assuming the existence of God. If the KCA is unsound because it ignores the possibility that God could traverse the infinite which theist, I wonder, would not cast the KCA aside as the price of dialectical victory over his critics?”) Once again, this response seems to me to be confused. If *I* were to come to believe that it is possible that there is an actually infinite collection formed by successive addition iff God exists, then *I* would almost certainly conclude that it isn’t possible that there is an actually infinite collection formed by successive addition. Goodbye to the *kalam* cosmological argument, but no assumption that God exists! As I have pointed out at length, critics of the *kalam* cosmological argument need only to reserve judgment on the question whether there can be actually infinite collections formed by successive addition. Such critics could take the combination of the newly discovered principle and their good independent reasons for rejecting the claim that God exists to establish powerful reason for coming down on the side of the claim that there cannot be actually infinite collections formed by successive addition. (Of course, it is just a fantasy to suppose that one might have good reason to accept the biconditional in question. But that does not mean that there is no serious point raised in its discussion.)

## 8

Oderberg (2002a:313) wrote:

For a true model of TSP<sub>b</sub> which is isomorphic to TSP<sub>f</sub> we need to refer to an ingenious proposal by Robin Small, one not considered by Craig. Suppose

Tristram Shandy plans his life in advance, and it takes one year to plan one day. The model then will be a genuine reversal of  $TSP_f$  with a one-to-one correspondence capable of being established between days lived and years of planning. Further, it *seems* (my emphasis) both (1) and (2) of the  $TSP_b$  are satisfied: Shandy has lived (and planned) from eternity, and genuinely completes his planning with the last day of his life, no day being left unplanned. Does Small's model of  $TSP_b$  prove, then, that the infinite can be traversed and hence that the Tristram Shandy paradox cannot be used as an argument against the idea of an infinite past? It does not, but before it is shown why, some further remarks need to be made. Small's critique of Craig's model destroys any notion that Shandy could have finished his life story if he had written from eternity. ... [W]e have Small saying: "We need not infer from the fact that Tristram Shandy has been writing from an eternity that he has written his last page. The argument I have set out ... justifies a stronger claim. It demonstrates that we cannot make both assertions." In other words, (1) and (2) *are* (my emphasis) inconsistent. And yet both assumptions have to be made if the paradox is to be at all relevant to the question of whether an infinite past can be traversed, because the assumptions are supposed to generate a model which proves that it can.

It seemed to me that, in this passage, Oderberg claims that, in  $TSP_5$ —"Small's model of  $TSP_b$ "—(1) and (2) *are* inconsistent, though there is an *appearance* of consistency. Since he later goes on to deny that there is any inconsistency between (1) and (2) in this model—Oderberg (2002a:316)—I worried that there is some inconsistency in the overall text. (See Oppy (2002:344f.) Oderberg (2002b:356) claims that I am guilty of a "simple misreading", and that he only here commits himself to the claim that (1) and (2) are inconsistent *in*  $TSP_3$ . However, while I agree with Oderberg that there is a vast difference between  $TSP_3$  and  $TSP_5$ —since  $TSP_3$  is quite trivially inconsistent—I am not convinced that the text of Oderberg (2002a) bears out the construal that Oderberg (2002b) tries to place upon it.

Look at the discussion of  $TSP_4$  ("Eells' model") in Oderberg (2002a:312). There is no doubt that Oderberg argues that there is an inconsistency between (1) and (2) in  $TSP_4$ . But it is entirely obvious that there is an inconsistency between (1) and (2) in  $TSP_4$  iff there is an inconsistency between (1) and (2) in  $TSP_5$ . Why? Well, (1) is the claim that Tristram Shandy puts down his pen, having finished his writing. (2) is the claim that Tristram Shandy has written from eternity past.  $TSP_4$  is the scenario in which Shandy records days in advance of their occurrence.  $TSP_5$  is scenario in which Shandy plans days in advance. In point of potential correspondences between days and years, there is *obviously* no difference between  $TSP_4$  and  $TSP_5$ . So, despite Oderberg's arguments—and despite what Eells may have argued to the contrary (cf. Oderberg (2002b:354))—there *must* be more than a simple misreading of Oderberg (2002a) at issue here.

Perhaps some further illumination can be obtained from a close look at Oderberg's discussion of  $TSP_4$ . Oderberg (2002a:312) writes:

A true reversal [of  $TSP_f$ ] would involve *any* [my emphasis] year's *preceding* the day which it recorded. This is absurd. ... Nonetheless, it is a model taken seriously by Ellery Eells, who uses it to claim that  $TSP_b$  is after all consistent with an infinite past."

Plainly enough, the model here described—involving “*any* year’s preceding the day which it recorded”—is *just* TSP<sub>4</sub> as that model is described in Oppy (2002) and above. So why does Oderberg (2002b:354) claim that, in this part of my discussion, I “change the scenario by, in effect, anticipating TSP<sub>5</sub>”? Well, the model that Oderberg *in fact* goes on to criticise—and in which (1) and (2) are alleged to be inconsistent—appears to be one in which Shandy has both an infinite past and an infinite future. (For future reference, let us call this model TSP<sub>6</sub>. I think that it is quite clear that Eells himself proposed no such model. But we needn’t fuss about this point.) Can we make a model in which there is no inconsistency between the claim that Shandy lays down his pen at a certain time with all of his life—past and future—recorded and the claim that Shandy has existed from eternity past and will exist for an eternity to come? (Of course, we might insist that it is impossible for Shandy to record any part of his future. But, for present purposes, we have agreed to set this kind of objection aside.)

Easily! Let us label the days either side of “the last day”—i.e. the day on which Shandy stops writing—“the second last day” and “the next day”; the hitherto unmentioned days either side of *those* days “the third last day” and “the day after the next day”; the hitherto unmentioned days either side of *those* days “the fourth last day” and “the day two days after the last day”; and so forth. Suppose that Shandy writes about the last day in the last year before he stops writing; the next day in the second last year before he stops writing; the second last day in the third last year before he stops writing; the day after the next day in the fourth last year; the third last day in the fifth last year before he stops writing; the day two days after the next day in the sixth last year before he stops writing; and so on. Plainly enough, in this model, Shandy “completes the record of his past, having already completed recording his eternal future” (cf. Oderberg (2002a:312), and yet there is no inconsistency between (1) and (2) in this model.

It is, of course, possible to describe variants of TSP<sub>6</sub> in which (1) and (2) *are* inconsistent. For instance, one could insist that Shandy finish the description of his infinite future before he commences the description of his infinite past. However—quite apart from whether Eells’ version of TSP<sub>6</sub> ultimately took this form—the crucial point to note is that there are versions of TSP<sub>6</sub> in which there is no inconsistency between (1) and (2). Once this point is noted, we can turn our attention away from the inconsistent variants, since these plainly have no interesting consequences for the debate about the possibility of the formation of an actual infinity by successive addition. (The defender of the claim that it is impossible to form an actual infinity by successive addition holds that there is no logically possible scenario in which there is an actual infinity formed by successive addition. The defender’s case is not strengthened at all by the exhibition of instances of logically impossible scenarios in which actual infinities are formed by successive addition, *unless* there is reason to suppose that if there were *any* logically possible scenarios of the desired kind, then the exhibited scenarios would belong to this class.)

There is one more comment that I shall make on the long quoted passage with which I began this section. Oderberg (2002b:356) makes it clear that the claim that “both assumptions [i.e. (1) and (2)] have to be made if the paradox is to be at all relevant to the question of whether an infinite past can be traversed, because the assumptions are supposed to generate a model which proves that it can” is one that he commits himself

to, and not merely one that he attributes to Small's discussion of TSP<sub>b</sub>. I objected that, in order to resist the core argument that Craig and Oderberg defend in connection with TSP<sub>5</sub>, viz:

1. If a collection formed by successive addition can be actually infinite, then the scenario described in TSP<sub>5</sub> is logically possible.
2. The scenario described in TSP<sub>5</sub> is not logically possible.
3. (Hence) a collection formed by successive addition cannot be actually infinite.

one need not suppose that TSP<sub>5</sub> is a model that *proves* that a collection formed by successive addition can be actually infinite. (Cf. Oppy (2002:344.) Oderberg (2002b:356) replies that one who resists this argument must prove—or at any rate give reasonable grounds for thinking—that TSP<sub>5</sub> is logically possible. This seems to me to get the dialectical situation wrong. All that an opponent of the argument that Craig and Oderberg defend needs to do is to argue that there is good enough reason to refuse to accept or endorse at least one of the two premises: if *either* of these two premises is open to reasonable doubt, then the argument is not a success. So, an opponent of their argument—and of the *kalam* cosmological argument more generally—can reasonably do what I have tried to do, namely, to cast doubt on the acceptability of premise 2. I haven't tried (very hard) to argue for the claim that TSP<sub>5</sub> is logically possible; however, I have tried (strenuously) to defend the view that it is *at least* an open question whether TSP<sub>5</sub> is logically possible. So long as it is an open question whether TSP<sub>5</sub> is logically possible, the argument that Craig and Oderberg defend is unsuccessful (and the key premise in the *kalam* cosmological argument remains controversial, whence, plausibly, it follows that that argument, too, is not successful).

## 9

In Oppy (2002:345), I say that it seems to me that Oderberg makes hash of Smith (1987) by supposing that claims that Smith clearly intends to apply to TSP<sub>1</sub>—and to what Smith correctly takes to be discussion of TSP<sub>1</sub> in Craig (1979)—are instead intended to apply to TSP<sub>5</sub> (or TSP<sub>3</sub> or TSP<sub>4</sub>). Oderberg (2002b:357) replies that he cannot find where in his original paper he is guilty of this, and so is unable to comment. Since there is no place in his paper where he does what I said that he had done, it is not surprising that he could not find it. (Oops! My apologies!) Nonetheless, it *is* true that Oderberg makes hash of an exchange between Craig and Smith by some unsympathetic interpretation of Smith. It will take some effort to explain why.

Here are the relevant passages from Oderberg (2002a:313):

One of Craig's objections to TSP<sub>b</sub> is that if Shandy had been writing from eternity, why did he not finish his autobiography yesterday or the day before, since by those times an infinite duration has also elapsed? And the same goes for any time in the past. So, at any time, Shandy should have finished, which means that by no time could he have finished, contrary to assumption (1) that he has finished. Now, Smith concedes as much, saying, "at no point in the past, and at no present, will Tristram Shandy's autobiography be complete". But he immediately adds the conclusion: "The story of Tristram Shandy is internally consistent, and so the idea

of an actually infinite past.” How, one might ask, can it be internally consistent if one of the assumptions is that there is a time by which Shandy has finished?

and Oderberg (2002a:313/4):

Connected with this is Smith’s objection that, while Craig supposes that because Shandy has had an infinite time to write, he should have finished at the end of every day, and hence not finished at all, there is no reason to suppose in the first place that he should have finished. For, asserts Smith,

It is false that the proposition “The number of past days written about is the same as the number of past days” entails “There are no past days unwritten about”. For, the number of past days written about is a proper subset of the infinite set of past days, and a proper subset of an infinite set can be numerically equivalent to the set even though there are members of the set that are not members of the proper subset. . . . So the infinite set of past days has the same number of members as its proper subset of days written about, yet has members that are not members of this proper subset (these members being the days unwritten about).

By what right, one might ask, does Smith claim that the set of days written about is a proper subset of the set of past days. He gives no reason at all for such an assertion; moreover, there is no reason. Nothing in Craig’s thought experiment gives reason to think that the relation between the set of days past and the set of days written about is analogous to that between the set of natural numbers and the set of even numbers, as Smith explicitly claims; Craig gives no comparable principle of selection. Shandy may get infinitely far behind, which as we noted already is an absurdity inherent in the story as Craig tells it, thus supporting his case; but this does not seem to be what Smith is referring to. What he is referring to is a mystery, and it is not to be wondered at that he later retracts this objection, though without further explanation (The retraction, important though it is, is buried in note 21 of his essay on “Big Bang” cosmology, not in any discussion of traversal of the infinite. Smith credits Ellery Eells, who does in fact criticise Smith’s objection, but neither Eells’ criticism nor Smith’s retraction contain much detail.)

In order to assess Oderberg’s criticisms of Smith, we need to turn to the writings of Craig (1979:33) and Smith (1987:87), to see what it is that Smith is arguing about.

First, Craig (1979:33):

Suppose Tristram Shandy has been writing from eternity past at the rate of one day per year. Would he now be penning his final page? Here we discern the real bankruptcy of the Principle of Correspondence in the world of the real. For according to that principle, Russell’s conclusion would be correct: a one-to-one correspondence between days and years could be established so that given an actual infinite number of years, the book will be completed. But such a conclusion is clearly ridiculous, for Tristram Shandy could not yet have written down today’s events. In reality he could never finish, for every day of writing generates another

year of work. But if the Principle of Correspondence were descriptive of the real world, he should have finished—which is impossible.

In this passage, Craig is arguing against the assumption that “the Principle of Correspondence” is descriptive of the real world. He claims that, given the assumption that “the Principle of Correspondence” is descriptive of the real world, it follows from the assumption that Tristram Shandy has been writing since eternity past that there is no day through which he has lived that has not been written about (a conclusion that is manifestly false, since we know that he has not written about today). Note that this passage is not about one of the versions of the Tristram Shandy paradox that we have been discussing; note, in particular, that it is not assumed that we are dealing with a scenario in which Shandy has finished writing, and so this scenario is distinct from TSP<sub>3</sub>. On the contrary, in this version of the story, it is assumed that Shandy has not—and indeed cannot have—finished writing; and this assumption is used to reduce “the Principle of Correspondence” to absurdity. (For future reference, I shall call this version of the story TSP<sub>8</sub>.)

Next, Smith (1987:87):

It is not clear at first glance why Craig believes the Tristram Shandy story to result in this ‘absurdity’, so it is best to reconstruct the logic of this story and try to pinpoint where the ‘absurdity’ is supposed to arise.

- (1) Tristram Shandy has been writing his autobiography at every moment in the past, and it takes him one year to write about one day.

This entails that

- (2) The temporal distance between any past day and the later time at which it is recorded increases with the passage of time.

And this in turn entails that

- (3) There is no later day finitely distant from any earlier day at which all prior days have been written about.

Now,

- (4) The present day is finitely distant from any past day.

Therefore,

- (5) At the present day all past days will not have been written about. Tristram Shandy’s autobiography will not have been completed.

Nevertheless,

- (6) The number of days written about is the same as the number of year elapsed prior to the present, for in each year Tristram Shandy has written about one day.

At this point, we can see that Craig is tacitly appealing to this supposed contradiction: If in relation to any present day there are an infinite number of past days and an infinite number of past days written about, then in relation to any present there are no past days unwritten about—which contradicts (5).

It is false that the proposition “The number of past days written about is the same as the number of past days” entails “There are no past days unwritten about”. For, the number of past days written about is a proper subset of the infinite set of past days, and a proper subset of an infinite set can be numerically equivalent to the set even though there are members of the set that are not members of the proper subset. ... So the infinite set of past days has the same number of members as its proper subset of days written about, yet has members that are not members of this proper subset (these members being the days unwritten about).

In conclusion, the fact that the number of past days written about corresponds to the number of past days does not entail that at each point in the past Tristram Shandy has completed his autobiography. Rather, at no point in the past, and at no present, will Tristram Shandy’s autobiography be complete. The story of Tristram Shandy is internally consistent, and so is the idea of an actually infinite past.

Plainly, Smith defends the view that there is no inconsistency between the assumption that “the Principle of Correspondence” is descriptive of the real world and the story which says that Tristram Shandy has been writing his autobiography from eternity past *and which holds that he is still writing*. Equally plainly, Craig claims that there *is* an inconsistency between *this* story and “the Principle of Correspondence”. When *Oderberg* criticises Smith for claiming that this story is internally consistent, on the grounds that the story includes the claim that Shandy has stopped writing, it is *obvious* that this criticism is way off target.

Smith claims that Craig mistakenly supposes that, if “the Principle of Correspondence” is descriptive of the real world, then if in relation to any present day there are an infinite number of past days and an infinite number of past days written about, then in relation to any present there are no past days unwritten about. This is his diagnosis of why it is that Craig supposes that there is an inconsistency between the story and the assumption that “the Principle of Correspondence” is descriptive of the real world. Moreover, in justifying this diagnosis, Smith makes use of the assumption that, at any time, the set of days written about is a proper subset of the days past at that time.

Eells (1988:454) objects that we get inconsistency if we add the assumption that, at any time, the set of days written about is a proper subset of the days past at that time, to the story under discussion. However, at Eells tacitly concedes, this is only so if we also add the assumption that the days of Tristram Shandy’s life get written about in the order in which they occur in time (earlier days getting written about earlier than later days). Given this further assumption, it is not hard to see that, if Shandy is writing about some day now, and if he has been writing since eternity past, there must have been some past time at which he was writing about his future, rather than about his past. So, if we suppose that the days of Tristram Shandy’s life get written about in the order in which they occur in time, then we cannot consistently suppose that he has

been writing from eternity past. (Of course, this is the point that Smith acknowledges to have been correctly noted by Eells. *Contra* Oderberg, I don't think that there is anything particularly mysterious about this point, or about the Eells/Smith discussion of it.)

*Given* that Craig is supposing that the days of Tristram Shandy's life get written about in the order in which they occur in time, then it turns out that Smith is wrong: it cannot be that Shandy has been writing from eternity past covering the events of his life at the rate of one day per year. But, of course, this result casts no doubt at all on the claim that it is possible for there to be actual infinities formed by successive addition: all it shows is that *one* kind of story about an actual infinity formed by successive addition is inconsistent. Moreover, it is *not* "the Principle of Correspondence" that is the villain of the piece. Suppose that we told the following story. The Hare and the Tortoise have been racing for one hundred minutes. Each minute, the Hare increases its lead over the Tortoise by 100 metres. The Hare is now 900 metres in front of the Tortoise. It is easy to see that this story is inconsistent. But the inconsistency in the version of the Tristram Shandy story that we are now considering is of just this kind—i.e. it is a *trivial* inconsistency, not one that has any significance for questions about the possibility of actual infinities formed by successive addition.

Eells suggests that we can restore consistency to the story by allowing that Shandy can write about days of his life before they happen. We have already noted that it is contentious whether this is an acceptable response. However, there is another alternative: we can allow that Shandy does not write about the days of his life in the order in which they happen. (Cf. the discussion of TSP<sub>6</sub> above, where we returned consistency to the story by giving up this assumption.) So long as Shandy does not write about his past days in the order in which they occurred, but rather writes about them according to some other plan, there is no evident reason why he cannot be still writing, having been writing since eternity past. (Perhaps we should give stories of this kind the label 'TSP<sub>7</sub>'.)

There is much more that I could discuss in Oderberg's discussion of my complaint that he is not always the most charitable interpreter of the writings of others. However—apart from observing that I used the word "cogent" when I meant to use the word "coherent" (cf. Oderberg (2002b:257)—I shall pass over the rest of this part of Oderberg's discussion, to focus on the argument that he offers in response to my challenge to come up with a *cogent* argument for the conclusion that no collections formed by successive addition are actually infinite.

The argument that Oderberg offers runs as follows:

- (1) All collections formed by successive addition are traversable.
- (2) All actually infinite collections are not traversable.
- (3) (Therefore) No collections formed by successive addition are actually infinite.

I think that Oderberg may be joking when he claims that this is a cogent (= persuasive) argument. Since it is an open question whether TSP<sub>1</sub> is an instance of a collection formed by successive addition that is not traversable—this is a claim that can plausibly be accepted by four-dimensionalists—it is clear that premise (1) is open

to question. Since it is open to question whether TSP<sub>5</sub> is not an instance of an actually infinite collection that is traversable—this is a claim that can be rejected by those who reject the Principle of Sufficient Reason—it is clear that premise (2) is open to question. A cogent argument for (3) has to provide cogent defences for both three dimensionalism and the Principle of Sufficient Reason if it implicitly relies on appeal to these doctrines. Oderberg knows full well that both of these doctrines are controversial, and that they are disputed by reasonable contestants of the claim that collections formed by successive addition cannot be actually infinite. So he cannot *seriously* suppose that the argument from (1) and (2) that he offers should convince anyone who hasn't already made up their mind about (3).

## 10

What do I think about Wittgenstein's scenario in which there is reverse recitation of an infinite series of numbers? (Cf. Oderberg 2002b:358/9.) Well, as I argued previously, I think that it is unclear whether or not it constitutes a logically possible case. Certainly, I know of no cogent arguments for the conclusion that it is not a logically possible case. Moreover, as I also said previously, I fail to see how anything that Oderberg says advances debate beyond this position. (Perhaps it is worth noting that Oderberg himself admits that he does no more than offer a "well worn reply". I wholeheartedly agree with him about this. Thumping the table harder does nothing to resolve either the uncertainties or the clash of intuitions.)

## 11

I find it interesting that Oderberg (2002b:360) ends with an argument that includes the observation that "many people do not (or at least should not) suppose there to be a vast difference between the acceptability of TSP<sub>2</sub> and TSP<sub>5</sub>—neither is acceptable". I agree with Oderberg that it is incorrect to focus on the distinction between TSP<sub>1</sub> and TSP<sub>5</sub>, since it is controversial to claim that TSP<sub>1</sub> involves an actual infinity formed by successive addition. (Hence, the tentative argument offered in Oppy (2002:349) fails.) But it is nonetheless a mistake to think that TSP<sub>2</sub> is on all fours with TSP<sub>5</sub>. If anything has become clear in the exchange between Oderberg and me, it is surely that there are variants of the Tristram Shandy paradox in which the only serious challenges to the claim that these variants describe logically possible scenarios, that are not also challenges to the claim that it is logically possible that there are actual infinities, derive from Principles of Sufficient Reason. In saying this, I agree with Oderberg (2002b:317) that he has made an original contribution to the debate in emphasising the role of Principles of Sufficient Reason in the assessment of TSP<sub>5</sub> and related scenarios.

Oderberg also claims that another thing that he does—"which Oppy seems to have missed"—is to "recapitulate Craig's objection" to TSP<sub>1</sub> that it is a scenario in which Shandy gets infinitely far behind in his autobiographical labour and so, *ipso facto*, cannot finish". Here, I have nothing laudatory to say. In those scenarios in which it is true that Shandy gets further and further behind in his labours, there is a far more direct and compelling argument to the conclusion that there is no time at which Shandy puts down his pen with no part of his autobiography unwritten. Any story in which Shandy *records* the days of his life (and hence writes about them only after they have happened) is required by logic to be one in which he does not put down his

pen with no day of his life to that point unrecorded, since in no such story can he have finished recording the day on which he is supposed to put down his pen. So—as we noted above—there is a very simple argument to the conclusion that TSP<sub>2</sub> is logically inconsistent. The very elaborate considerations that Oderberg claims to take from Craig, and which Oderberg supposes to support the conclusion that there is something absurd about the contemplated scenario, actually add nothing to the analysis of the case.

## 12

Despite the lengthy nature of this paper, there are arguments in Oderberg (2002b) that I have not discussed. It should not be assumed, merely because I have not discussed some part of Oderberg (2002b), that I agree with what he says there. Of course, nor should it be assumed that I disagree with what Oderberg says in those parts of his discussion that are not herein examined. We disagree about a great deal; but we do not disagree about everything.

This said, it might be worth trying to end with some kind of statement about where I take it that there is still disagreement about the various versions of the Tristram Shandy paradox.

**TSP<sub>1</sub>:** We agree that there is no logical contradiction in TSP<sub>1</sub>. However, we disagree about whether this is a case of an actual infinity formed by successive addition. Oderberg says “No!”, because he is a three-dimensionalist who holds that the future is merely potential (and not actual). I say “Yes!”, because I am a four-dimensionalist who holds that the future is actual (though not, of course, present), and because I insist that “successive addition” is just a matter of having the right kind of serial structure. (N.B. TSP<sub>1</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy begins to write about the days of his life on a particular day—say, June 30, 2002—having been born some finite number of years earlier. Tristram Shandy lives forever, and continues to write about the days of his life forever. Tristram Shandy does not write about a day of his life until after that day has occurred. No day of Tristram Shandy’s life remains forever unrecorded.)

**TSP<sub>2</sub>:** We agree that this case is trivially inconsistent, indeed multiply trivially inconsistent. Hence, we ought to agree that this case has no interest for the debate about whether there can be actual infinities formed by successive addition. (N.B. TSP<sub>2</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy begins to write about the days of his life on a particular day—say, June 30, 2002—having been born some finite number of years earlier. Tristram Shandy lives forever, and continues to write about the days of his life forever. Tristram Shandy does not write about a day of his life until after that day has occurred. No day of Tristram Shandy’s life remains forever unrecorded. There is a day on which Tristram Shandy puts down his pen, with no day of his life not written about.)

**TSP<sub>3</sub>:** We agree that this case, too, is trivially inconsistent. Hence, again, we ought to agree that this case has no interest for the debate about whether there can be actual infinities formed by successive addition. (N.B. TSP<sub>3</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy has lived from eternity past, and has been writing about his life from eternity past. Tristram Shandy does not write about a day of his life until after that day has occurred. There is a day on which Tristram Shandy puts down his pen, with no day of his life not written about.)

**TSP<sub>4</sub>:** We disagree about whether it is possible for someone to *record* their future (by a kind of natural knowledge or experience). Oderberg thinks that this is plainly impossible—and hence he supposes that TSP<sub>4</sub> is impossible. I think that it is an open question whether it is possible for someone to record their future (by a kind of natural knowledge or experience). Oderberg also thinks that TSP<sub>4</sub> violates a plausible version of the principle of sufficient reason, viz. the claim that every event has an adequate explanation—and he supposes that this consideration alone would suffice to rule out the logical possibility of TSP<sub>4</sub>. I am not convinced that TSP<sub>4</sub> does violate the principle of sufficient reason that Oderberg defends; and I think that it is at least an open question whether there can be events that have no adequate explanation. Finally, I think that it is an open question whether TSP<sub>4</sub> is logically possible. (N.B. TSP<sub>4</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy has lived from eternity past, and has been writing about his life from eternity past. Tristram Shandy does write about at least some of the days of his life before they occur. There is a day on which Tristram Shandy puts down his pen, with no day of his life to that point not written about. When Tristram Shandy writes about a day before it occurs, he is recording what happens on that day.)

**TSP<sub>5</sub>:** We disagree about this case for the second of the two reasons mentioned in connection with TSP<sub>4</sub>. Once again, Oderberg thinks that TSP<sub>5</sub> is not a logical possibility, whereas I think that it is an open question whether or not it is a logical possibility. I also think that there is a weak presumption in favour of the view that TSP<sub>5</sub> is a logical possibility. (N.B. TSP<sub>5</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy has lived from eternity past, and has been writing about his life from eternity past. Tristram Shandy writes about each of the days of his life before it occurs. There is a day on which Tristram Shandy puts down his pen, with no day of his life not written about. When Tristram Shandy writes about a day, he is merely planning what he will do on that day.)

**TSP<sub>6</sub>:** I think that we disagree about this case, even once we agree to set to one side the question of whether it is logically possible for someone to record the future. Oderberg argues that, on independent grounds, this story is mathematically inconsistent, whereas I have argued that it is not. However, it might be that Oderberg will agree that there are mathematically consistent versions of this story, *modulo* the question of the possibility of writing about the future. Of course, Oderberg does not accept that the story describes a logically possible scenario. (N.B. TSP<sub>6</sub> requires the

following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy has lived and written from eternity past, and will live and write for eternity future. There is a day on which Tristram Shandy puts down his pen, with no day of his life not written about.)

**TSP<sub>7</sub>**: Perhaps we disagree about this case as well. I have argued that there is no obvious reason to suppose that there are no consistent versions of this story. It is unclear what Oderberg thinks about this. (N.B. TSP<sub>7</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy does not write about the days of his life in the order in which they occur. Tristram Shandy has lived and written from eternity past. Tristram Shandy will live and write for eternity future. Tristram Shandy does not write about a day of his life until after that day has occurred.)

**TSP<sub>8</sub>**: We agree that this version of the story is inconsistent, though perhaps we disagree about whether the inconsistency is *trivial*. (N.B. TSP<sub>8</sub> requires the following claims to be true: Tristram Shandy takes one year to write about one day of his life. Tristram Shandy writes about the days of his life in the order in which they occur. Tristram Shandy has lived from eternity past, and has been writing about his life from eternity past. Tristram Shandy will live for eternity future, and will continue to write about his life for eternity future. Tristram Shandy does not write about a day of his life until after that day has occurred.)

Apart from our disagreements about the various versions of the Tristram Shandy paradox, we also disagree about the bearing of these paradoxes on the question of the possibility of an actual infinity formed by successive addition, and about various sundry matters. However, I shall not try to summarise these further points of disagreement here. Instead, let me end with something completely different.

Few people realise that Tristram Shandy has a younger brother, Christmas. Christmas Shandy has also been writing from eternity past. However—befitting someone with his name—all that Christmas Shandy does is to spend each year recording the events of Christmas Day of the preceding year. So, for example, Christmas Shandy spent 1987 recording the events of Christmas Day, 1986. This story—call it CSP<sub>1</sub>—is a story that involves an actual infinity formed by successive addition. Moreover—and this is the point of introducing the story—it seems that CSP<sub>1</sub> is not vulnerable to any of the allegations that can be made against TSP<sub>3</sub>-TSP<sub>8</sub>. CSP<sub>1</sub> is not trivially inconsistent, in the way that TSP<sub>2</sub>, TSP<sub>3</sub>, and TSP<sub>8</sub> are trivially inconsistent. Unlike TSP<sub>4</sub> and TSP<sub>6</sub>, CSP<sub>1</sub> does not involve the contentious assumption that it is possible for someone to record their future. Unlike TSP<sub>5</sub>, CSP<sub>1</sub> does not involve any apparent violation of the claim that every event must have an adequate explanation: for example, there is no puzzle about *why* Christmas Shandy records the events of Christmas Day 1986 in 1987 rather than at some earlier or later time. So, I say, the story of Christmas Shandy is *plainly* a more appropriate story for those who dispute about the claim that it is logically possible for there to be actual infinities formed by successive addition to focus upon than is any of the variants of the Tristram Shandy story that we have examined. If there is some inconsistency or absurdity in the thought that there can be actual infinities formed by successive addition, then there must be some inconsistency or absurdity in the story of Christmas Shandy. But I do not think that my opponents have yet given any good reason for supposing that there

is some inconsistency or absurdity in *this* story. (Of course, this is not to claim that it is logically possible for actual infinities to be formed by successive addition iff the story of Christmas Shandy describes a logical possibility. For instance, if you think that people are essentially finite, you may deny that the story of Christmas Shandy describes a logical possibility, while nonetheless allowing that the universe could be an actual infinity formed by successive addition. However, as the debate currently stands, I think that the story of Christmas Shandy does pose an unanswered challenge to the proponents of the *kalam* cosmological argument. Where is the inconsistency or absurdity in this story?)

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