

## Impossible worlds

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**Abstract:** Richard Brian Davis offers several criticisms of a semantics I once proposed for subjunctive conditionals with impossible antecedents. I reply to these.

In the eighteen years since I wrote the papers Davis discusses,<sup>1</sup> my views have changed considerably: my forthcoming *God and Necessity* is anti-Platonist, inclines to fictionalism about worlds and does not employ the null-world semantics.<sup>2</sup> I never saw the ideas Davis discusses as ‘the clue to the sense in which propositions ... can be said causally to depend on God’.<sup>3</sup> There are no special *senses* of causation; causation is causation, wherever we find it.<sup>4</sup> And I saw getting counterpossibles’ truth-values to differ only as part of meeting an objection to the claim that other necessary beings depend causally on God.<sup>5</sup> I now think we could meet the objection even if all counterpossibles are trivially true. So perhaps the ideas Davis discusses are sins of my youth. But are they really sins?

Davis’s first argument against me runs this way (I follow his numbering). On my account,

- (5) Necessarily, if God did not exist,  $\emptyset_w$  would have obtained.

But,

- (6) Necessarily,  $\emptyset_w$  obtains iff nothing exists, and  
(7) Necessarily, nothing exists iff it is true that nothing exists.

So, on my account,

- (8) Necessarily, if God did not exist, it would have been true that nothing exists.

Davis claims that (8) entails:

- (9) Necessarily, if God did not exist, the proposition ‘Nothing exists’ would have been true.

If (9) is true, the proposition would have existed had  $\emptyset_w$  been actualized. If (8) entails (9), I doubt it does so ‘by conceptual analysis of (8)’s consequent’.<sup>6</sup> It does iff necessarily,

NE It is true that nothing exists only if a proposition exists,

and I doubt that NE is something one gets by conceptual analysis of ‘It is true that nothing exists’. Truth does not wear its metaphysics on its conceptual sleeve.<sup>7</sup> Nor do that-clauses. But actually, I think one can deal with this argument without contesting the claim that (8) entails (9).

I accepted Adams’s at/in distinction.<sup>8</sup> As I saw it, ‘Nothing exists’ is true at, not in, the null world, the proposition existing only in other worlds. If nothing existed, the other worlds wouldn’t exist, and so the proposition wouldn’t either. If the proposition wouldn’t exist, there are two options.<sup>9</sup> One is to deny that, were  $\emptyset_w$  actual, it would have been true that nothing existed – that is, hold that (7) is true but does not concern  $\emptyset_w$ . The thought would be that (7) quantifies only over *possible* worlds, asserting only that all and only those in which nothing exists (i.e. none) are also worlds in which it is true that nothing exists.

It is of course impossible that (7), a necessary truth, not be true. But this doesn’t entail that it is impossible that (7) not be true if something impossible is actual. If an impossibility  $p$  is actual, it *follows* that a necessary truth is not true, namely  $\sim p$ . (Of course, if the actual impossible world is  $\lambda$ , then  $\sim p$  is also true. But in  $\lambda$ , this latter cuts no ice against its not being true that  $\sim p$ .) (7) is not true in at least one impossible world,  $\lambda$ . Nothing rules it out that  $\emptyset_w$  is another if  $\emptyset_w$  is a world, as I argue below. Nor does its being impossible that necessary truths not be true entail that it is impossible that (7) not be true-in- $\emptyset_w$ . If there are impossible worlds, it is true and perhaps necessarily true that certain necessary truths are not true in them.

That were  $\emptyset_w$  actual, it would not be true that nothing exists may seem to violate

Link  $(p \rightarrow q) > (p > q)$ ,

for where  $p$  is ‘ $\emptyset_w$  is actual’, and  $q$  is ‘It is true that nothing exists’, if the latter is not true at  $\emptyset_w$ , Link’s antecedent is true, and its consequent untrue (given the null-world semantics). But it does so only if Link holds not just for reasoning about possible worlds but for reasoning about impossible worlds. And it’s not clear why we should believe this. Absent specific argument, we have no reason to if there are impossible worlds other than  $\lambda$ .  $\lambda$  contains all propositions. So an impossible world differs from  $\lambda$  only if it fails to contain some proposition  $\lambda$  contains. And who’s to say that the missing propositions can’t include Link? But if a world does not contain Link, Link is not true in it. There is no guarantee that Link is true at it, either: a non- $\lambda$  impossible world could contain or be a counter-example to Link, and if it does or is, it would not be correct to assert

Link about that world from without. If Link is untrue at a world, we will be misled if we use Link to reason out that world's contents. The null-world semantics implies that there is at least one non- $\lambda$  impossible world  $\emptyset_w$ ,  $\emptyset_w$  does not contain Link, and Link is not true at  $\emptyset_w$ . Davis has some specific arguments against  $\emptyset_w$ 's being a world at all. I discuss these below. But the general point about other impossible worlds stands regardless, and Davis gives no reason to think that if there are impossible worlds,  $\lambda$  is the only one.

There is another way to undermine the use of (7) here. Davis thinks that on my 1988 theory, coupled with a non-deflated theory of truth, there can't be truth-value gaps.<sup>10</sup> But there can. Suppose that there is an appropriate sort of indeterminacy in the world – say, that on the right theory of vagueness, where something is not definitely red and not definitely not red, it is just indeterminate whether it is red. Then the true story about the world (non-deflated-true, correspondence-true if you like) will be one in which some propositions lack truth-value: if it is indeterminate whether this is red, the true story may be one in which 'This is red' is not true or false.<sup>11</sup> The truths that 'This is red' exists and 'This is red' has no truth-value are part of the world's story, but 'This is red' is not: the story mentions but does not use 'This is red', as it mentions but does not use all propositions false in it. So there could be truth-value gaps even if a world-story theory were true. There being such gaps is compatible with an inflated and even a correspondence theory of truth. The correspondence-relations involved could be these. True propositions correspond to obtaining states of affairs. False ones do not correspond to anything but are made false by the existing of the actual cosmos as a whole: they are false because there is an actual cosmos and it definitely does not contain what would make them true. Those without truth-value do not correspond to anything and are not such that the actual cosmos definitely does not contain what would make them true.

Thus, if one (correctly<sup>12</sup>) took Davis's  $\sim(7a)$  as 'Nothing exists and it is not true that nothing exists', one could hold both an inflated theory of truth and (if one liked) that  $\sim(7a)$  is possible. There being nothing at all would just be an odd case in which propositions do not correspond to anything, and are not such that the actual cosmos definitely does not contain what would make them true. For if there is no actual cosmos, 'the actual cosmos' does not refer, and so 'The actual cosmos definitely does not contain what would make them true' is not true. And of course if the propositions don't exist, they don't correspond to anything. In such a case, the true story about  $\emptyset_w$  existing at other worlds, would be precisely that were it actual, nothing would exist, 'Nothing exists' would not be true, and a correspondence theory of truth makes this the right thing to say about  $\emptyset_w$ . It thus is easily conceivable that (7) be false if truth is inflated and it is possible that nothing exist. So what harm in saying that truth is inflated but (7) fails to hold of one impossible world? I add apropos  $\sim(7a)$  that *pace* Davis, it doesn't take existentialism to have a reason to suppose that 'Nothing exists'

might not exist.<sup>13</sup> Were it possible that nothing exist, it would be possible that this proposition not exist – just for this reason. Any reason to endorse the first is ipso facto reason to endorse the second. It only requires believing that all propositions exist contingently, which Davis, at least, is happy to do.

The other option if ‘Nothing exists’ wouldn’t exist is to say that were  $\emptyset_w$  actual, it would be true that nothing existed, but truth would be deflated. Davis suggests that my younger self couldn’t consistently reject NE or its necessity by deflating truth in non-null worlds. True enough, but why not deflate only in  $\emptyset_w$ ? In impossible circumstances, impossible measures suffice: even if truth is inflated when the ontology is available for it, we needn’t think it is when the ontology isn’t. If truth really is necessarily inflated, then if we apply (7) to  $\emptyset_w$  and consider how things would be were  $\emptyset_w$  actual, we bring in a further impossibility: either truth’s being deflated, or truth’s being inflated were  $\emptyset_w$  actual even though this is inconsistent with the supposition that  $\emptyset_w$  is actual. Which? We ought not gratuitously to import further impossibilities into the consideration of any given one.<sup>14</sup> And we ought to pick the one that fits best with the initial impossible supposition, i.e. the least gratuitous one.

Davis seems to think this way in practice: this is why he likes his (19) but not his (20). This is also the way we usually pick counterpossibles in philosophical argument. Aquinas argues that as truth consists in a relation between the world and an intellect,

NI Were there material things but no intellects, there would be no truths.<sup>15</sup>

He has it explicitly in view that God exists necessarily; as he sees it, NI’s antecedent is impossible. If NI’s antecedent is impossible, NI is true, but on the standard treatment of counterpossibles so too is

Were there material things but no intellects, there would be truths.

Why accept NI rather than this? Because NI fits best with the premises – follows from them, in fact, if we assume Link. But then we ought to pick the impossible, deflated theory of truth in filling out the supposition that nothing exists, as it fits better with the supposition than a theory of truth inconsistent with it does.

But how can we do so if NE is necessary and so strictly implied by (8)? The answer may be that if there are impossible worlds other than  $\lambda$  we cannot simply assume that (Link) is true at any of them that can be closer to actuality than  $\lambda$ . If this is the case, then though (8) strictly implies NE, we can’t without further ado infer from this that (8) counterfactually implies NE when such a world is in question. Suppose that some world  $W$  other than  $\lambda$  can be the closest impossible world to actuality. Then  $W$  would be the right world to appeal to in evaluating some counterpossible. But in  $W$ , Link fails.  $W$  will be either null or non-null.

If null, (Link) is not true in or at it. If  $W \neq \lambda$ ,  $W$  is non-null, and  $W$  can be closest to actuality,  $W$  contains an impossibility  $p$  such that to evaluate counterpossibles whose antecedent contains  $p$ , we consider  $W$ ,  $p$  implies everything, and yet not every proposition is true in  $W$  – only  $\lambda$  is a world in which all propositions are true. So some proposition  $p$  implies is not true in  $W$ . Let  $q$  be the proposition  $p$  implies which  $W$  does not contain. Then if  $W$  is the impossible  $p$ -world closest to actuality,  $p \rightarrow q$ , but it is not the case that  $p > q$ . So Link fails in/at  $W$ , and so one can't use Link in reasoning out how things would be, were  $W$  actual.

The null-world semantics makes precisely the claim that:

IW Some impossible world other than  $\lambda$  counts as closest to actuality for evaluating some counterpossibles,

since for extraordinary counterpossibles,  $\emptyset_w$  is closest. And while Davis dislikes  $\emptyset_w$ , he has nothing to say against IW, and agrees that were God not to exist, nothing would exist: which is to say that a non- $\lambda$  situation in which nothing exists, however we understand it, is the Godless situation closest to actuality.<sup>16</sup> But if this is so, Davis should agree that Link fails in some impossible situations, and so can't object on Link grounds to deflation in  $\emptyset_w$ .

Let me add a further point. If there are impossible worlds other than  $\lambda$ , plausibly Link fails in all of them that contain the proposition that they themselves are actual. For each world  $W$ ,  $W$  is the closest world to actuality in which  $W$  is actual: clearly so for possible worlds, and intuitive, at least, for the impossible. So, plausibly, if a world  $W$ , possible or impossible, contains the claim that  $W$  is actual, there is a proposition for whose evaluation  $W$  is the closest world to actuality, namely that  $W$  is actual. So for any impossible world that contains the claim that it is itself actual, there is a proposition for whose evaluation it is closest to actuality. That being so, for every such world, there is a  $q$  such that 'W is actual' strictly implies  $q$ , but were 'W is actual' true,  $q$  would not be true. This is so, further, even if the world in question also contains Link. Any such non- $\lambda$  impossible world that contains Link does not contain the impossibility that Link is not true in it, but pays for this by admitting another impossibility, that in a world in which Link is true, there is also a counter-example to it. But if there is a counter-example to it, Link is not a reliable guide to reasoning out what this world contains.

If Link thus seems a frail reed once we leave the safe haven of the possible, it's worth asking what arguments there are for Link. The only argument I know for something close to it is by Edward Wierenga.<sup>17</sup> It runs this way:

- (1)  $(\Phi)(\Psi)(X)$  ((if  $\Phi > \Psi$ ) and  $(\Psi \rightarrow X)$ , then  $(\Phi > X)$ ).<sup>18</sup>
- (2)  $(\Phi)(\Phi > \Phi)$ .
- (3) If  $(p > p) \bullet (p \rightarrow q)$ , then  $(p > q)$ . (1, UI)
- (4) If  $(p \rightarrow q)$ , then  $(p > q)$ . (2 UI, 3)

(4) is only 'close to' Link because Wierenga uses 'if/then' rather than '>.' But if we let '>' replace this, we have an argument for Link. The problem with this argument is that if there are impossible worlds other than  $\lambda$  and some can be closer to actuality than  $\lambda$ , we face counter-examples to (1). For the null-world case, let  $\Phi$  = 'Nothing exists',  $\Psi$  = 'God does not exist', and  $X$  = 'There exists a greatest prime number'. If some of these are non-null, one abstract structure for counter-examples will be that  $\Phi\Psi X$  are all impossible, the closest  $\Phi\Psi$ -world is not  $\lambda$  and lacks  $X$ , and this world is also a closest  $\Phi$ -world. Theories one might express in part via counterpossibles can be used to fill the structure in. For that matter, given what's been said so far, one might wonder whether 'It is true that nothing exists' generates a counter-example to (2) for impossible situations, regardless of what one thinks of the null-world semantics. The moral here is that if one finds good overall reason to allow non- $\lambda$  impossible worlds and let some be closest, Link is no impediment.

In saying that all ordinary counterpossibles are trivially true, my earlier self took it that for ordinary counterpossibles the closest-to-actual world is  $\lambda$ . To evaluate a counterfactual  $A > C$ , you consider the  $A$ -world most like the actual. To see what that world contains, you add  $A$  to the actual world and make the minimum changes needed to accommodate the addition. If you change no law of logic, then for any impossible or impossibility-generating addition to a possible world, the resulting world is  $\lambda$ . My earlier thought was that changes in logic would be so deep and far-reaching metaphysically that any world differing in logic from any possible world is ipso facto less like that possible world than  $\lambda$  is. But I now think there is something to be said for the view that if we add to a world  $W$  the contradictory of one truth in  $W$ , and so alter logic that this brings no other impossibility into  $W$ , the resulting world is more like  $W$  than  $\lambda$  is. And my reasoning above about propositions of the form 'W is actual' itself casts doubt on my earlier view. For as  $\lambda$  contains all propositions, for each  $W$ ,  $\lambda$  contains 'W is actual'. 'W is actual' is an ordinary counterpossible. So if it is to be true that  $W$ , not  $\lambda$ , is the closest-to-actual world in which it is true that  $W$  is actual, it can't be the case that  $\lambda$  is the closest world to actuality for all ordinary counterpossibles. So which should give? It would gratuitous to add to our consideration of the impossibility that  $W$  is actual that were  $W$  actual, the resulting world would be not  $W$  but  $\lambda$ . So the no-added-gratuity rule suggests that we keep the idea that were it true that  $W$  is actual,  $W$ , not  $\lambda$ , would be actual, and seek (if we wish) a finer-grained treatment of ordinary counterpossibles.

Davis's 'counterpossible crisis' section offers three arguments. One concerns the claims that (3c) is true and (4c) false. This (he says) is not as it should be. But (3), (4), (3c), and (4c) do not really bring the null-world semantics into play. The antecedent of each is that something ceases to exist. If it does, it has previously existed. If in a world something ever exists, that world is not the null world: the relevant set contains propositions describing how things are at least till that

something disappears. God's non-existence could not in this case have been (as I once called it<sup>19</sup>) a black hole sucking all a world's propositions into itself. The null-world semantics, in short, is intended only for cases in which nothing *has* ever existed. What Davis really needs are instead,

(3c\*) If  $p$  never existed, God would never have existed,

and

(4c\*) If  $p$  never existed, God would have existed.

On the null-world semantics, these really amount to:

(3c\*\*) If nothing ever existed, God would never have existed,

and,

(4c\*\*) If nothing ever existed, God would have existed.

We should want (3c\*\*) to be true and (4c\*\*) false if we think they differ in truth-value. Because (3c\*\*) and (4c\*\*) give the reason (3c\*) comes out true and (4c\*) false, (3c\*) and (4c\*)'s having these truth-values tells us nothing at all about the dependence between God and propositions. One way a semantics can help make it out that other necessary beings depend on God is to assign the 'right' truth-values to some counterpossibles. Another is to show why what seem to be the 'wrong' truth-values aren't.

Davis notes that every impossibility strictly implies 'God does not exist'. If so, then if strict implication is entailment, on my 1988 account, every impossibility is extraordinary.<sup>20</sup> Further, if it's necessary that something exist, the consequent of every extraordinary counterpossible strictly implies that something exists, and so given the first consequence, if strict implication is entailment, every such counterpossible winds up false on the null-world semantics – even those I want to call true.<sup>21</sup> Fair enough, but the patches needed here aren't large. If I want to deal in strict implication, I need only say that a counterpossible is extraordinary iff its antecedent *non-paradoxically* implies that God does not exist and an extraordinary counterpossible is false iff its consequent *non-paradoxically* implies that something exists. But in truth, I wasn't wholly happy with the strict implication account of entailment when I wrote these papers. My frequent talk of impossibilities 'involving' rather than just implying certain things was intended to gesture at some more adequate account, which I was not then able to supply.

Davis is no fan of the null set:

... the null set (is) 'a little speck of sheer nothingness'. (Could) anything ... be true at a 'speck of sheer nothingness'? There's nothing there for anything to be true at! ... The identity conditions of a set are determined by the identity conditions of its members ...  $\emptyset_w$  ... has no members. But then why think that it *is* a set? (Many) things ... lack (set theoretic) members: books, dinosaurs ... . None of these is a set ... . What principled reason could there be, then, for thinking that  $\emptyset_w$  is a set? What ... *makes* it a set? It can't be its lack of members.<sup>22</sup>

One's tempted to say that the null set is nothing at all by the old saw that there is 'nothing to a set but its members': if so, no members, nothing left. And perhaps Davis is tempted to say 'no entity without identity' and to hint that, lacking members, the null set has no identity-conditions, or at any rate none of a proper set-like sort. But the saw is really about sets with members, and even about them it is false taken in one sense: sets have properties their members don't. The set {Peter, Paul} is a collection and a pair-set. Neither Peter nor Paul nor their mereological fusion nor the two as a plurality are so. The set is abstract; Peter, Paul, fusion and plurality aren't. The set has members, sub-sets and super-sets, and stands in union and intersection relations; Peter, Paul etc. have analogues of these but not the things themselves. Sets have number-properties their members may lack.<sup>23</sup> In all these cases it is the set that bears the relevant properties, and there is no obvious way in which the sets' properties reduce to properties of their members. It might also be worth mentioning against a too-strict reading of the old saw that even if their members have parts, colours, flavours, shapes and the like, sets don't.

If sets can bear properties, and these do not reduce to properties of their members, this should reduce one's resistance to the following claim: the null set isn't sheer nothingness. It is a subject of properties. It is a thing of the kind whose other instances all have members. It is something which contains nothing, like a sealed room whose only 'content' is a vacuum. (Some will reply that the room at least contains space, or space-time: but this isn't so on a relational account of these, and were such an account true, vacua would nonetheless exist.) It is something the number of whose members is zero. (All sorts of things take zero values. Why not this?) Thus, there is something there for things to be true at. It has perfectly precise identity-conditions, given in terms of its membership: it is the unique set with no members. If there is a null set, then even if sets' identity-conditions are in terms of their members, it is not the case that having members is what makes something a set. And, of course, lack of members isn't what makes something a set either. Perhaps being a set just is being the kind of thing that has members, and the null set's being a set consists in its being a thing of the same kind as things with members – which is not true of books etc. So what *makes* the null set a thing of this kind? Well, what makes an electron an electron, a point a point (if there are points), or a simple property a property? It is not any fact about constituents or contents. They just are, primitively: at some point, explanation runs out, and things just are of the kinds they're of.

Davis doesn't like my use of the null set as a world either.<sup>24</sup> Well, to begin, perhaps (*pace* Davis<sup>25</sup>) worlds needn't represent things as being certain ways. Worlds *are* ways things can be. Perhaps being the way is one thing and representing it quite another. (For Plantinga, ways are states of affairs propositions represent; for Stalnaker and Forrest, they are world-properties propositions represent; etc.) This could be true even of specific worlds within an overall theory

on which worlds are worlds by representing ways things could be: worlds needn't all do their work in the same way. Leaving that aside, on a set-theoretic world-theory, it isn't in general the *set* that represents the way things can be (or in any extended sense 'is true'<sup>26</sup>), but rather its members. But it isn't the null set's contents that represent. In this case the set does represent, due precisely to its lack of contents. A statue's having a hole at a particular place – its lacking matter there – can represent the pupil of an eye. It represents precisely by its lack. One might reply here that the statue's 'features, contours, parts, or pieces'<sup>27</sup> do the representing. But they are just sufficient conditions for its containing a hole, i.e. lacking matter where the pupil would be. It's what they're conditions *for* that represents the pupil. So the statue represents the pupil in virtue of lacking matter in a particular place. The null set's lack of members represents a world's lack of constituents. The likeness seems rather close. Consider the way it is with the membership of the null set. That is the way it would be with the constituency of the world, were the null world actual. It sounds like the very same property is involved, though that can't be quite right (were the null world actualized, there would be no properties).

The null set represents in virtue of its property of lacking members or of being zero-membered. These properties are real and positive, though a concrete lack (so to speak – e.g. a hole), as such, is not. So I suggest that Davis has found no mortal sins among my older views, but at most a couple of peccadilloes. Why then have I changed my mind? For that, you'll have to read the book.

## Notes

1. Brian Leftow 'A Leibnizian cosmological argument', *Philosophical Studies*, 57 (1989), 135–155; *idem* 'God and abstract entities', *Faith and Philosophy*, 7 (1990), 193–217.
2. Brian Leftow *God and Necessity* (Oxford: Oxford University Press, forthcoming).
3. Richard Brian Davis 'God and counterpossibles', *Religious Studies*, 42 (2006), 371–391. Nor was I ever 'committed to using counterpossibles to forge our links of dependence between God and propositions' (381). The dependence, as I saw it, was causal, and I did not adopt a counterfactual analysis of causation. Another misreading: Davis has it that I used 'actual cosmos' to refer to 'the entire set of concrete and abstract objects. If we let C be that set, then actualism is the view that everything there is is a member of C' (373). I didn't. 'Actual cosmos' referred to a partly-concrete totality, the universe plus all abstract objects. (We could think of this as a mereological fusion, as abstract objects can be parts (conjuncts are parts of conjunctive propositions; we say that geometry is part of mathematics, and it's not clear that we can't mean by this just that the truths of the one are part of the truths of the other).) It was intended to contrast with 'actual world', which refers to the abstract possible world the actual cosmos actualizes. And actualism can't be as Davis describes. Were everything there is a member of C, C would be a member of C. That's set-theoretically impossible (unless one goes in for Aczel-style ill-founded sets). For that matter, since sets are abstract, Davis's C would be a set including all sets – and once again, set theory rules this out.
4. Even creation *ex nihilo*, I'd suggest, is unique only in what it brings about and how it brings it about, not in what it is to bring it about.
5. Leftow 'Leibnizian cosmological argument', 143–144. A causal claim usually entails a claim of counterfactual dependence. I considered the objection that the causal claim could be held to be

- vacuous, and so defeated, were this entailment denied (absent failsafe causation and the like).  
The null-world semantics was a way to let the entailment stand.
6. Davis 'God and counterpossibles', 377. Perhaps Davis wants to claim this because he suspects if something of the sort isn't true, then on his favoured account of implication (8) won't in fact imply (9).
  7. On this, see William Alston 'Truth: concept and property', in Richard Schantz (ed.) *What Is Truth?* (Berlin: De-Gruyter, 2002).
  8. Leftow, 'Leibnizian cosmological argument', 149. Note that every truth in a world is true at it.
  9. Apart from allowing the proposition to be true despite the inconvenience of not existing. I share Davis's actualism, so to me this is not attractive.
  10. Davis 'God and counterpossibles', 376 and n. 20.
  11. This would be so on supervaluational approaches (which are popular) and also on the 'simple gap' approach of Michael Tye (so e.g. Michael Tye, 'Sorites paradoxes and the semantics of vagueness', *Philosophical Perspectives*, 8 (1994), 189–206).
  12. *Pace* Davis 'God and counterpossibles', n. 20.
  13. *Ibid.*, 378.
  14. This rules in favour of not going down this road, but instead saying that (7) isn't true at  $\emptyset_w$ , if, as I suspect, this being so involves no impossibilities. (That it involves there being such a world as  $\emptyset_w$  does not entail that it involves impossibilities. There is nothing impossible about there being impossible worlds. What's impossible is that such a world be actual. And I defend the use of  $\emptyset$  as a world below.) But I could be wrong that this involves no impossibilities, so it's worth seeing how this other option works.
  15. Thomas Aquinas *De Veritate*, 1, 2. I owe the reference to Linda Zagzebski.
  16. Here 'situation' is a placeholder, to avoid mention of impossible worlds yet suggest that something has to take their place for evaluation of counterpossibles.
  17. Edward Wierenga 'Theism and counterpossibles', *Philosophical Studies*, 89 (1998), 92.
  18. I follow Wierenga in using just 'if' and 'then' where I do. He does not gloss these in terms of a particular connective, and so I cannot.
  19. Leftow 'God and abstract entities', 197.
  20. Davis 'God and counterpossibles', 381.
  21. *Ibid.*
  22. *Ibid.*, 382.
  23. Only 'may': both  $\{\{\text{Peter, Paul}\} \text{ and } \{\text{Paul, Moses}\}\}$  and its members are two-membered sets.
  24. Davis 'God and counterpossibles', 383.
  25. *Ibid.*
  26. *Ibid.*, 378.
  27. *Ibid.*, n. 24.