

On The Open Future: Replies to Rhoda and Rubio

(Together with Précis of *The Open Future: Why Future Contingents are All False*)

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The Open Future is organized around the resolution of the longstanding *problem of future contingents*. (What is a future contingent? Roughly: a claim to the effect that something will happen, when whether it happens isn't causally determined either way.) The problem of future contingents arises out of the following conflict. On the one hand, we have the *grounding* problem: if some future contingents are true, what accounts for their truth? Wouldn't the truth of a future contingent be problematically "arbitrary"? On the other hand, we have the *logical* problem and a series of *practical* problems. The logical problem: if future contingents aren't true, are they neither true nor false? Or are they false? Or what? And how do these positions interact with standard logical principles, like bivalence and the Law of Excluded Middle? Some of the practical problems: what of *betting* about the future – and what about the fact that we seem to often permissibly *assert* future contingents? In *The Open Future*, I argue that the grounding problem stands, and the logical problem and the practical problems can be addressed. In the end, we don't *need* true future contingents, and this favors an "open future" view that simply dispenses with them – and the most elegant way of doing so is to say that they are uniformly *false*. My open future view thus preserves the classical logical principles of bivalence and Excluded Middle.

The doctrine of the "open future" has been of perennial interest within theistic philosophy of religion, and it isn't hard to see why. What you say about future contingents impacts what you can say about foreknowledge, which impacts what you can say about providence, which impacts what you can say about the problem of evil. For many, the "open future" position is a crucial lynchpin in a much more comprehensive overall package. It is thus unsurprising that what can appear to be a niche issue in metaphysics, language, and logic has taken on such an outsize role in philosophy of religion. Historically, some of the most important work on these problems has come from philosophers of religion – and that trend continues to this day.

Readers of this journal might be interested in the key roles that *omniscience* plays in my discussion. Here three issues are worth mentioning.

First, my view crucially relies on a controversial distinction between *the negation of a prediction* and *the prediction of a negation* – a distinction I concede is hard to hear in ordinary settings.

(See Ch. 3.) But note the following. Suppose we are convinced that God is temporal, but also perfectly omniscient. In that case, we might still make a *conceptual* distinction between – in God – an *absence of anticipation* and an *anticipation of absence*. In other words, to say that doesn't God anticipate a sea-battle isn't *by itself* to affirm that God anticipates an *absence* of a sea-battle tomorrow. But if God is omniscient, this seemingly just is the crucial conceptual space between the denial of the prediction that there is going to be a sea-battle tomorrow, and the *prediction* that it is going to be tomorrow that there is no sea-battle.

Second, one of the most difficult problems for the open-futurist program undoubtedly has to do with credence and probability. For instance: if it is false that there will be a sea-battle tomorrow, how could there be (say) a *high chance* of a sea-battle tomorrow? Wouldn't this have to amount to a high chance that something my view says is false is in fact, well, true? There is certainly a vexing issue here, with a variety of moving parts. (See Ch. 6.) But thinking about omniscience, I contend, may help us find a way forward. Suppose we concede for the moment that the future is “open”, in the sense that there are no true future contingents – and that the claim that there will be a sea-battle tomorrow is a future contingent. Now, in this circumstance, how likely is it that God anticipates a sea-battle tomorrow? Here we may plausibly (albeit controversially) say “not at all”, or “0 percent”; it is not at all likely that an omniscient being anticipates a sea-battle tomorrow, when there is no truth saying that there will be, or won't be! However, it still seems possible that God should know that the objective probability of a sea-battle tomorrow is high – say, .7. In that case, however, we need to distinguish between the following: the probability of a sea-battle tomorrow (which is .7), and the probability (assuming an omniscient being exists) that an omniscient being anticipates a sea-battle tomorrow (which is 0). But in that case, we seemingly *also* need to distinguish between the probability of a sea-battle tomorrow, and the probability of the *claim* – the future contingent – that there will be a sea-battle tomorrow. There can be a high chance of a sea-battle tomorrow, even though the *claim* that there will be a sea-battle tomorrow is false. This is strange – but it is, I contend, coherent.

Third, thinking about omniscience plays a crucial role in my key argument (Ch. 7) – co-authored with Brian Rabern – against two rival open-future positions: Thomason's supervaluationism, and MacFarlane's relativism.¹ Both views maintain that future contingents aren't true – but both views *also* attempt to preserve a principle of tense-logic we term *Retro-closure*. According to this principle, that it *is* that *p* implies that it *was* the case that it *will* be that *p*. (In Prior's notation: $p \rightarrow \mathbf{PF}p$.) But consider what this combination predicts about the beliefs, over time, of an omniscient being. Today we ask God: do you anticipate a sea-battle tomorrow?

¹ This chapter is a reprint of Todd and Rabern 2021.

Because the future is open, God, despite being omniscient, at least doesn't say "yes". But then we wait. There is a sea-battle. We ask God: yesterday, did you anticipate this sea-battle today? If God grants Retro-closure, *and* maintains that he was omniscient yesterday, then now God must say: "yes I did!" But this seems bizarre. Notably, as far as I am aware, a position that affirms the combination of an open-future view *and* Retro-closure is unattested in the history of discussions of future contingents within philosophy of religion. If I am right, this is no accident: thinking about omniscience reveals an irresolvable tension in these views. It is better simply to deny Retro-closure.

On The Open Future: Replies to Rhoda and Rubio

First, let me say that it is an honour that IJPR has made my book the focus of this symposium, and I am grateful to both Alan Rhoda and Daniel Rubio for their stimulating comments.

Reply to Rhoda

Rhoda's contribution consists of three sections: two on what we might call "stage-setting" issues, and one section criticizing my "metaphysical" case for open-futurism.

Rhoda counsels thinking of "future contingents" as "causally contingent event-types". I have no objection to Rhoda stipulating various terms, but we should note some key drawbacks of this kind of stipulation. For instance, it is routine to ask how anyone – especially, say, God – could know future contingents. But plainly it makes no sense to ask how someone could know an event-type; at best, one can ask how someone could know that an event of that type will come to pass – but now we are back to what Rhoda calls the "abstract realm of propositions". (Rhoda seemingly suggests that in ordinary life, no one cares about propositional truth; I reply: perhaps not under that description, but it is strained to suggest that ordinary persons aren't concerned with what's true.)

We can also grant to Rhoda that causally contingent event-types can have intermediate "chances" – whereas propositions can't have intermediate (objective) chances. But even if this is right, our key questions about *truth* remain. In short, let us say, with Rhoda, that there are causally contingent event-types with intermediate chances. This is fine. Whether we call *these* "future contingents" or instead the propositions *about* these events (saying that some such event will happen) is a merely terminological decision with no philosophical import. We still have to address the question: how to understand the truth-values of these kinds of propositions?

Finally, Rhoda wonders why I don't define up an operator that is the "dual" of **F** ("It will be that..."). (When it is false that you *must* do it, it is true that you *may not* do it, and vice versa; in that sense, *may* is the "dual" of *must*.) It is, of course, simple enough to define such an operator (to express *some available future is not a p future*) – but it is considerably more difficult to show that any such dual appears in natural language, let alone, as Rhoda's brief remarks *seem* to suggest, that English "might" expresses that dual. Consider a speaker who says, "Either he'll come tomorrow or he won't come tomorrow; I just don't know which. He might come and he might not." The relevant treatment of *might* would immediately render this speaker inconsistent: insofar as the

speaker grants that he might come and he might not, the speaker is committed to its being false that he will and false that he won't, in which case the first part his utterance would be senseless. This goes to a broader point: Rhoda and I both agree that future contingents are all false, but Rhoda appears considerably more relaxed about the common-sense prospects of this view than I am, and the degree to which it accords with everyday linguistic practice.

So much for the stage-setting issues. Rhoda then turns my discussion, in Chapter 1, of the metaphysical case for an open-future view – in particular, to my argument that that case should not be made by appeal to any general thesis about *truth*, viz., that truths require truthmakers, or that “Truth Supervenes on Being”. Very briefly: my claim is that, combined with presentism and indeterminism, if such principles give us an open future, they will also give us an open *past*. The result is that we shouldn't motivate an open-future view *via* a claim about truth in general, but instead *via* a claim about the *future in particular*. Part of my case involves the following contention: we shouldn't try to ground truths about the past in “present traces”, precisely because it is plausible to suppose that all such traces could be erased, and yet the truths about the past wouldn't be erased with them. Rhoda suggests that in the end I *am* committed to such “traces”:

All we need, he might say, is that propositions like <A sea battle occurred in 2019> that correctly describe the unique actual past contingently possess the intrinsic property *being true*. ... This gives us something like the sort of *brute* truths about the past that Todd wants, but it doesn't get rid of traces any more than the previous attempt. For, we must ask, why do only those propositions about the past that correctly describe the unique actual past have the intrinsic property *being true*? Clearly they must have this property *in virtue of* the past's having been the way it was. But then these brute truths about the past are *themselves* traces of the past. It seems, then, that every effort to get rid of traces brings us right back to them.

But there is ambiguity here on what we mean by “traces”. In the sense I intended, paradigmatic instances of traces would be:

- In northern Arizona, there is a 1200 meter diameter crater – a trace of a meteor impact ~50,000 of years ago.
- Bullet casings lay on the ground, the back door broken open. From these traces, the detective tries to retrodict the story of what happened.

Hartshorne and Rhoda's ingenious idea (see Rhoda 2009) is to move all these traces into the mind of God; just as events leave physical traces of the sort just mentioned, they leave traces – albeit not physical traces, since God's mind isn't physical – in the mind of God, which bears the record of the past. Now, my claim is that any “trace” of *this* sort (even, *per impossible*, a divine memory) could be erased, and yet the truths about the past wouldn't be erased with them. Rhoda suggests, however, that I *am* committed to traces: which past-tense propositions are (brutely) true depends on *what actually happened!* Yes, of course. This, however, is not enough to claim that these truths are “traces” of the past in the relevant sense. Indeed, it seems to be a category mistake to suppose that “truths about the past” – even brute truths about the past – are *traces* of the past, in the sense in which a particular arrangement of bullet casings might be a trace of a crime.

But let me concede something to Rhoda here – which in fairness I did already concede in my book. Rhoda's theistically-backed argument for presentism and the open future is, to my mind, considerably more plausible than its non-theistic counterpart. Part of my reticence to go this route is dialectical: do we really want to hang an argument for the open future on theism? And another part is substantive: can't we imagine God's memories themselves changing – without taking the truths about the past with them? And yet another part is economical: can't we motivate a presentist + open future package in a simpler way? Here I appealed to analogy with *fiction*. Rhoda suggests, however, that this analogy itself points back to TSB; I disagree, but can't take up the point here.

In lieu of trying to address that final point, let me note the following. On reflection, there are really *two* metaphysical arguments for the open future view one can discern in my book, one direct, and the other more indirect. The first appears in Chapter 1, and is criticized here by Rhoda.² The second, however, is in some sense distributed over the remaining seven chapters, and consists in the claim that we simply do not *need* to posit true future contingents; accordingly, a theory that does without them is to be preferred on grounds of parsimony (cf. 2021: 48) The second argument, to my mind, is the far more powerful one – but naturally it can't be summarized in any succinct, numbered-premise kind of way. Happily, I think Rhoda and I are broadly in agreement on this second argument, even if we disagree on the first.

Reply to Rubio

² Cf. also Ingram 2023.

Rubio's overall aim is to replace one key element of the package of views I defended in Chapter 2 with a different element. The result, Rubio contends, is an improved package – one that has potential advantages over the package I defended.

But let me back up. In Chapter 2, I contrasted three metaphysical models of the undetermined future. In an indeterministic context, there are multiple future histories that are causally possible. Now, of those histories, we can say:

Model I. There is an actual future history, and it is determinate which it is.

Model II. There is an actual future history, but it is indeterminate which it is.

Model III. There is no such thing as the actual future history.

A bookkeeping point: these Models are *metaphysical*, and are by themselves silent on the semantics of future contingents – in particular, on the semantics for *will*.³

As stated, Model II, Rubio contends, gives rise to an unattractive form of indeterminate identity. With this I'm inclined to agree – though I am not sure whether this cost will be felt by those already attracted to Model II. At any rate, Rubio thus wishes to set Model II aside.

In Chapter 2, I suggested a *modal* semantics on which – as Rubio says – *will* is a “box” (a universal quantifier) over the available futures, and compared and contrasted the results of applying this semantics to our respective three models. (Availability is defined so that, on Model I, there is one available future, and it is determinate which it is; on Model II, there is one available future, but it is indeterminate which it is; on Model III, however, *every* causally possible future is available.) In the end, Rubio's suggestion comes to this: we should adopt Model III in the metaphysics, but *not* the semantics I defend. My package: Model III in the metaphysics + the modal view in the semantics. Rubio's package: Model III in the metaphysics + ... something else in the semantics:

We answer the metaphysical question in the negative: there are no facts pinning down a unique actual future. This takes it out of alignment with model 1 and into alignment with model 3 on its metaphysics. We answer the semantic question along the lines sketched above: ‘will- φ ’ is true iff all possible futures are φ -futures; ‘will- φ ’ receives a third truth value (informally: indeterminate or not yet settled) in cases where some possible futures

³ In hindsight, my pictorial “flow chart” did make it seem that the “Models” included the semantic component; let me now say that I regret the implication!

are φ - futures and some possible futures are not φ -futures; ‘will- φ ’ is false if none of the possible futures are φ -futures.

In defense of this stance, Rubio appeals both to Thomason’s (1970) supervaluationism, *and* to the trivalent system of Łukasiewicz – different as these views are. In the end, Rubio faces a dilemma. If he’s suggesting the supervaluationist option, then the trouble is twofold: this theory is explicitly designed to *also* validate Will Excluded Middle (WEM) [Will $p \vee$ Will $\sim p$] – which, *qua* open-futurist, Rubio (like me) hopes to deny. And – though this point is subtle – my contention is that supervaluationism in fact requires Model II. On the other hand, if he’s suggesting Łukasiewicz, then we must give up the *plain* Law of Excluded Middle – and it is unclear what advantage this drastic view would have over the one I’ve defended.

Rubio’s choice is related to – or perhaps just is – the following one. There are only two options for the compositional semantics for *will* of which I’m aware. The first is that *will* is a (universal) modal.⁴ The second is that *will* is a tense.

On standard supervaluationism, *will* is a pure tense, which semantically simply shifts us forward along a given history. Since it is indeterminate which history is the “actual” one, and – though this is unfortunately almost always left unsaid! – some history *is* the actual one, we thus say that “will p ” is true iff *no matter which* history is the actual one, we have p – i.e., just in case p holds on every history.

There is thus an important difference in kind between two different ways of saying that whether “it will be that p ” is true at t depends on whether in *every* available history (relative to t), p is true.

For supervaluationism, you quantify over the futures only by accident, as it were – the only way to tell whether “will p ” is true *no matter which* history is the actual one is to simply look at all the histories and see whether all of them are such that you have p . But at the semantic level, no quantification is really taking place. (The quantification occurs in what MacFarlane (2014: Ch. 9) calls the “postsemantics”; cf. Iacona and Iaquinto (forthcoming).⁵) Still, the point remains that on this approach, there is still an actual history; the observation that p holds *no matter which history*

⁴ Cariani 2021 attempts to give us another: that *will* is a modal, but “selectional”, not quantificational. Ultimately, however, Cariani’s selectional semantics can be seen as a notational variant on the universalist proposal; see Willer 2022 and Todd (forthcoming). This is, of course, not an objection to Cariani’s proposal!

⁵ A comparison: consider “Jones is bald.” Now, say that on some admissible ways of “precisifying” the cutoff between being bald and non-bald, Jones is bald, but on other such ways, Jones isn’t bald; the supervaluationist thus proposes: “Jones is bald” is true iff *no matter where the cutoff lays* (that is, according to every admissible precisification of “bald”, which gives us a cutoff between bald and non-bald), Jones is bald. This contention does not commit the supervaluationist to the implausible claim that there is a universal quantifier somewhere in the logical form of “Jones is bald”. Similarly: the supervaluationist says that there is nowhere a quantifier over histories in the logical form of “There will be a sea-battle tomorrow” – whereas *modal* views of *will* of course say that there is.

is actual is relevant only if some history *is* actual, just as the observation (say) that the President of the United States is a Texan *no matter which person in the room is President of the United States* is relevant only if some one person in the room *is* President of the United States. Or my point again: the entire supervaluationist apparatus only gets going in the first place if some one history is the actual one; then we can reason about “precisifications” of “the actual history”. On supervaluationism, then, we have the following package:

Will is a tense that shifts us forward along a given history, but since in an indeterministic context it is indeterminate which history is ours, although some one history *is* ours, “it will be that *p*” [indeed, any formula whatever] is true in such a context just in case it is true *no matter which* history is ours; if “it will be that *p*” is true if some one history is ours, but is not true if some *other* history is ours, then it is neither true nor false⁶; and if “it will be that *p*” *isn’t* true no matter which is ours, then it is false.

This package validates WEM for the following reason: if some one history is ours, either in that history you at some point have *p*, or in that history at no point do you have *p*. In that sense, even if “Will *p*” isn’t true (because not validated by every history: not every history is such that if that history were actual, “Will *p*” would be true), and “Will $\sim p$ ” isn’t true (for the same reason), “Will $p \vee \text{Will} \sim p$ ” *is* indeed true (this *is* validated by every history; because every history is determinate, classical, and complete, every history is such that if that history were the actual one, then this formula is true).⁷

It seems, then, that Rubio doesn’t (or shouldn’t) have in mind Thomason. What about Łukasiewicz? On this view, we can comfortably say that *will* has a modal/quantificational semantics; the trivalence simply adds a wrinkle not countenanced by my view (or Prior’s “Peirceanism”). Now, insofar as Rubio means to *recommend* Łukasiewicz’s view, the key points are as follows. First, my view and Rubio’s will both deny Will Excluded Middle, but Rubio will *also* deny *plain* Excluded Middle. On the Łukasiewicz semantics, if *p* is indeterminate, then so is $\sim p$ –

⁶ A bivalence-friendly variant (cf. Barnes and Cameron 2009): then it is either true or false, but it is indeterminate which.

⁷ NB: in Chapter 2, I suggested that my modal semantics were in an important sense “neutral”, and part of this neutrality consists in the following observation: the noted supervaluationist package – on which *will* is a tense – appears empirically equivalent to a slightly different one: ‘Will’ is a universal quantifier over every available history, and in an indeterministic context, only one history is available, though it is indeterminate which it is. The key observation: given a modal view of *will*, we can replicate the behavior of *will* as a tense simply by defining the availability relation so that, given Model II – which the supervaluationist needs anyway – it only ever gives us a single history; even if *will* were a modal, in that case, it would behave exactly as a tense – one that simply takes you forward in the sole available history. It is in this sense that I contend that the supervaluationist can adopt my modal semantics; they’ll simply say that the universal quantification over *all* the available histories is an idle wheel. That idle wheel would start spinning, however, if we dropped Model I or II in favor of Model III.

in which case if “There will be a sea-battle” is indeterminate, then not only is “There will not be a sea-battle” indeterminate, but so is “It is not the case that there will be a sea-battle”. And the disjunction of two indeterminacies, for Łukasiewicz, is itself indeterminate. Hence we give up LEM, at least in its full generality.⁸ My view, of course, faces no such unappealing (or other non-classical) result.

But Rubio’s preference for the Łukasiewicz view seems tied to the final interesting observation Rubio makes. Rubio observes that my view treats both of the following as false:

2+2 will be 5 tomorrow.

There will be a sea-battle tomorrow.

No available future has it that 2+2 is 5 tomorrow, whereas some available futures (let’s say) *do* have a sea-battle tomorrow. And yet the view treats them the same: they are both false. (For Rubio, however, the former is false, but the latter is at least *indeterminate*.) Is this a downside of my view? I don’t think so. This is just another case in which there are interesting differences amongst falsehoods. Compare:

Biden is a pumpkin.

Biden is from Texas.

Well, both are false – and “equally” so, although the former is impossible, whereas the latter possible. In short, it isn’t the job of our semantics for *will* to mark Rubio’s difference, but the job of something else. Similarly: as Rubio notes, we want to distinguish between those things a fiction simply fails to include, and those things it rules out. True. But this difference needn’t appear in a difference in the truth-status of the relevant claims. It is false that, in *The Lord of the Rings*, Gimli is an elf (indeed, because, in *The Lord of the Rings*, Gimli *isn’t* an elf, but a dwarf). It is also false that, in *The Lord of the Rings*, Gimli put on his left boot first on the day he first met Gandalf; but this is not because, in *The Lord of the Rings*, Gimli *didn’t* put on his left boot first on that day, but because *The Lord of the Rings* simply says or implies nothing about this. The openness of the future, I contend, is much the same.⁹

⁸ As Rubio notes, however, he can preserve LEM for the tense-less fragment of the language; see Rubio 2019: Ch. 4.

⁹ For helpful comments on earlier drafts of this paper, I would like to thank Brian Rabern, Andrew Bailey, Alan Rhoda, and Daniel Rubio. I am grateful to Andrei Buckareff for his excellent work in organizing this symposium.

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