

## Critical Notice

*The Open Future: Why future contingents are all false* By Patrick Todd (Oxford: Oxford University Press, 2021. Pp. xi + 212.)

### 1 Introduction

Patrick Todd's *The Open Future* defends the view that all future contingent statements, statements like 'It will rain tomorrow', are false.<sup>1</sup> Not only is 'It will rain tomorrow' false, but so is 'It will not rain tomorrow'. It is Todd's contention that the falsity of all future contingents provides the best account of the openness of the future.

Todd thinks that the best account of the open future is one according to which no actual future exists. In Chapter 2, he rejects alternative metaphysical accounts of the future in which there is a determinate way the future will go, yet we are ignorant about how it will go, and in which there is exactly one actual future, but it is in some sense indeterminate which among many possible futures it is. Todd argues that the most plausible account of openness is given by an account according to which "there is no 'actual future history' in the first place" (p.22).

Todd's book explores the relation between this metaphysical view and the semantics of future contingents. According to Todd, 'will' is a modal that quantifies over future histories. He takes as his starting point a view put forth by Arthur Prior under the label 'Peirceanism' (Prior 1967). Peirceanism maintains that sentences of the form 'It will be the case that  $p$ ', are true just in case  $p$  holds in all causally possible futures, false otherwise. A causally possible future is understood as a future compatible with the past and the laws of nature. Let us assume that

(R)            It will rain tomorrow

is a claim that is unsettled by the past and the laws of nature. According to Peirceanism, (R) is false because there are causally possible futures in which it rains, and causally possible futures in which it does not. Similar reasoning shows that 'It will not rain tomorrow' is also false.

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<sup>1</sup>This assumes that whether it will rain tomorrow is a future contingent in the sense that it is not entailed by the past and the laws of nature.

Peirceanism faces substantial difficulties. Todd states, “My goal in this book is to articulate a version of the thesis that future contingents are all false that is not subject to the problems that plague the Peircean” (p.2). In this critical note, I consider the extent to which Todd achieves this goal. In what follows, I discuss three challenges that face Peirceanism, how Todd’s account attempts to meet these challenges, and the extent to which it succeeds.

## 2 Asserting Future Contingents

There are two distinct problems concerning the assertion of future contingents for the Peircean.<sup>2</sup> The first problem, which I’ll call the ‘Content Problem’, is that the account seems to mischaracterise what one asserts in asserting future contingents like (R). It seems that one may assert that it will rain tomorrow without asserting that in every causally possible future it will rain tomorrow, for example, if one thinks that there is strong evidence for rain tomorrow. One may assert (R) while maintaining that there is a causally possible future in which it fails to rain, and this doesn’t seem at all inconsistent. Furthermore, claiming in response to an assertion of (R) that there is a causally possible future in which it fails to rain tomorrow does not amount to a denial or rejection of what has been asserted.

Like the Peircean, Todd embraces the following thesis:

(APF) It will be in  $n$  units of time that  $p$  iff in all of the causally possible futures, in  $n$  units of time,  $p$  (p.36).

However, he departs from Peirceanism in denying that (APF) provides a *semantic* account of the meaning of ‘will’. The semantic account of ‘will’ is given by the following:

(AAF) It will be in  $n$  units of time that  $p$  iff in all of the available futures, in  $n$  units of time,  $p$  (p.36).

An *available future* is defined as, “those futures that are consistent with the past and the laws and the future directed facts” (p.25). *Future-directed facts* are facts about the future over and above those entailed by the past and the laws of nature. Todd claims, “As I see it, this problem for the Peircean arises precisely because the Peircean does not make a semantic distinction between the *available* futures and the causally possible futures” (p.39, original emphasis).

It might initially seem that this distinction makes some progress against the Content Problem. When I assert that it will rain tomorrow, what I assert need not be that it rains in every causally possible future. Rather on Todd’s proposal, what I assert is that it rains in all *available* futures, where those are the futures that are consistent with the past, the laws, and the future-directed facts. However, considering the proposal more thoroughly, it is less clear that

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<sup>2</sup>I think there are similar problems to the ones discussed here for Peirceanism that arise for beliefs about future contingencies, but I focus here on assertions about future contingencies.

progress has been made against the original difficulty. According to Todd, the available futures *just are* the causally possible futures since there are no future-directed facts. Just as on the original Peircean account, one might assert (R) on the grounds that one has good evidence for it, perhaps because one reads in the typically reliable forecast that there is a 90% chance of rain tomorrow, yet not take there to be rain in every available future. Perhaps one is aware that the available futures just are the causally possible ones. Or one thinks that both rain and no rain are compatible with the past, the laws, and the future-directed facts (whatever they may be), but nonetheless asserts (R) based on good evidence for rain tomorrow, all the while acknowledging that there are available futures in which it fails to rain. Taking the assertion as a claim that there is rain in every future compatible with the past, laws, and the future-directed facts still seems to misdescribe the content. So the move to (AAF) as providing a semantic account of 'will' claims does not avoid the Content Problem.

The second problem, which I'll call 'the Norm Problem', is that assertion is plausibly governed by a truth-entailing norm: assert p only if p is true.<sup>3</sup> If the Peircean accepts such a norm, then future contingents can never be appropriately asserted. This jars with the fact that we seem to appropriately assert future contingents all the time: "I will see you later", "It will rain tomorrow", "The plane will be landing shortly", etc. Todd is aware of this challenge and dedicates Chapter 8 of the book to addressing it. His response is that assertions of future contingents do in fact assert something false, but they frequently *communicate* something true. When Arthur asserts that it will rain tomorrow, he asserts something false, but he communicates something true, namely that the world is tending towards rain tomorrow. If Bea asserts "I will meet you for coffee at 2pm", she asserts something false, but again she communicates something true: that her present intention is to meet you for coffee. Todd claims that assertions of future contingents are appropriate only if they communicate something true about present tendencies or intentions.<sup>4</sup> This is an interesting proposal, however, it isn't clear that it can fully explain the appropriateness of assertions involving future contingents. There are cases where we communicate something true about present intentions or tendencies, but the assertion nonetheless seems inappropriate. If Arthur says to Bea "I will pick you up from the airport", but then decides later to go golfing instead, the fact that at the time of the assertion, he communicated something true about his present intentions is not enough to make his assertion appropriate. Similarly, if a meteorologist asserts, "It will not rain tomorrow" but it does rain, the assertion seems inappropriate even if at the time of the assertion the world was tending towards rain. Such cases are not counterexamples to Todd's proposal, but they do suggest that more is involved in the appropriateness of assertions of future

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<sup>3</sup>I take a 'truth-entailing' norm to include a truth norm, a justified true belief norm, and a knowledge norm for assertion. The Norm Problem for certain accounts of future contingents is discussed in detail by Besson and Hattiangadi (2014).

<sup>4</sup>Todd claims "I contend that for any assertion that the theory of this book judges to be false, then either (a) that assertion, though false, communicated a truth regarding either (i) a plan or (ii) a worldly tendency, or (b) that assertion was inappropriate" (p.196).

contingents than truthfully communicating present plans or tendencies.

### 3 Betting, Credences, and Tendencies

A second problem for Peirceanism arises from considering betting on the future.<sup>5</sup> Suppose Arthur asserts that it will rain tomorrow. His friend, Bea, offers to bet him that it will, and Arthur accepts. Tomorrow comes and it pours rain. Arthur goes to collect his winnings and Bea asks him, “When we made the bet yesterday, did you think it was causally impossible that it wouldn’t rain?”

“Of course, not,” replies Arthur.

“Well, then, I’m not paying up”, says Bea, “because what you said yesterday was false.”

And if Peirceanism is true, Bea has a strong case. But, of course, she does not.

Again, it seems like no progress is made in switching from causally possible futures to available futures. Even if we take the content of the bet to be: *that it rains in every available future*, Bea still has a compelling case that the content is false. As a matter of fact, the available futures just are the causally possible ones since there are no future-directed facts. So Bea could argue, “Yesterday you claimed that it would rain in every available future and the available futures were the causally possible ones, so what you said is false, I’m not paying up.” Again, if Todd’s account is true, Bea has a strong case. But, of course, she does not.

Todd dedicates Chapter 6 to betting on the future and what he terms the “Zero Credence” problem. This is a fascinating and rich chapter that raises several issues that are deserving of further exploration, not all of which I can address here.<sup>6</sup> In this chapter, Todd denies that when one bets on some future eventuality, one bets on the proposition that the eventuality will occur. Instead, he claims that betting is a normative act such that when one places a bet that some future eventuality will occur, one is owed the winnings in just those futures in which the eventuality does occur. In betting that it will rain tomorrow, Arthur performs an act that results in him being owed the winnings in all and only those futures in which it rains tomorrow. It is for this reason, Todd contends, that Bea’s refusal to pay — in a case of an ordinary bet — is inappropriate, even if she is correct that the content of what Arthur said is false.

However, as Todd himself recognizes, this cannot be the whole story about betting. Some bets are rational, and some are not, despite that in both cases one is owed the winnings in the relevant futures. Typically, *credences* in a given proposition being true are introduced in giving an account of the rationality of bets. Put simply, it is rational for an agent to purchase a bet for stake  $s$  on proposition  $p$  with payout  $w$  just in case their credence in  $p$  is greater than  $(s/w)$ .

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<sup>5</sup>Prior (1976, p. 100) considers betting as a challenge to Peirceanism. My presentation of the challenge follows his.

<sup>6</sup>For example, Todd’s discussion of “Probability in Fiction” (Section 6.12) strikes me as a potentially promising approach for making sense of uncertainty and wondering about the future on an account that maintains that all future contingents are false.

If Arthur assigns a credence of .50 to the proposition that it will rain tomorrow, then, given his beliefs, it would be rational for him to purchase a bet for £10 that will pay out more than £20 for rain and refuse a bet that pays out less than £20.

But credences cannot do the necessary work on Todd's theory. In fact, he states that, given that all future contingents are false, one's credence that it will rain tomorrow ought to be 0 (p.131). Furthermore, he claims that one can rationally accept a bet that it will rain tomorrow, "while having credence 0 in the claim that it will rain" (p.131). Given this, credences provide no guide to rationality. However, Todd does point to an alternative way of giving an account of when a bet is rational in terms of *tendencies*: "What matters to the rationality of this bet, in short, is not the likelihood of truth of any given future contingent; what matters is instead the strength of the world's current *tendencies*" (p.132, original emphasis). He goes on to write, "It is fundamental to the open futurist's picture of reality that the world could be strongly *tending* in a certain direction, *without* this implying anything about a likelihood of a current *fact* about the resolution of those tendencies. There are the tendency facts, but no *further* facts about the *resolution* of these tendencies. Since there *are no* such facts, claims purporting to *report* such facts—claims, for example, to the effect that there will be rain tomorrow—are claims in which I will have accordingly have [sic] credence 0" (p.133, original emphasis).

This distinction between credences and likelihoods of a future contingent proposition being true, on the one hand, and tendencies, on the other hand, strikes me as problematic. According to Todd, talk of probability and chance of some future event occurring can be grounded by the world's current tendencies, but not in the probability or chance of a given proposition about the event. This forces one to accept all sorts of abominable conjunctions like, with storm clouds gathering on the horizon, "The weather is tending towards rain, but it isn't the case that it will rain" and "There's a high chance of rain later, but it's not the case that there will be rain".

Todd is aware of these worries attempts to assuage them by turning to a solution that makes supposedly analogous claims in the case of counterfactuals. He considers views, like that of David Lewis, that reject conditional excluded middle (CEM):

- If it had been the case that  $p$ , it would have been the case that  $q$  OR If it had been the case that  $p$ , it would have been the case that not- $q$ .

On Lewis's account, the counterfactual "If an indeterministic coin were flipped yesterday, it would have landed heads" is false because it is not true that all the closest worlds in which I flip a coin yesterday are worlds in which the coin lands heads. Yet, Lewis grants that if an indeterministic fair coin had been flipped yesterday, the probability that it would have landed heads is 50%. And so the falsity of the counterfactual is compatible with ascribing a substantial likelihood to heads. Similarly, Todd suggests, the falsity of 'It will rain tomorrow' is compatible with ascribing a substantial probability to rain tomorrow. He notes that the denier of CEM accepts that "The probability

that the coin would have landed heads if it had been flipped does not equal the probability of the conditional ‘If the coin had been flipped, it would have landed heads’” and goes on to claim, “If we can make sense of that (and I hope we can) then we can make corresponding sense of the claim that the probability of rain tomorrow does not equal the probability of the claim ‘There will be rain tomorrow’” (p.139). However, I deny this conditional premise. On Lewis’s view, the probability of a counterfactual is not equivalent to counterfactual probability. But we can make sense of this claim precisely because the object to which we are assigning a credence differs in the two cases. Take  $F$  to be the proposition that I flip a coin yesterday and take  $H$  to be the proposition that it lands heads. On Lewis’s view, the counterfactual  $F \Box \rightarrow H$  is false and so  $\Pr(F \Box \rightarrow H) \approx 0$ . Yet, he denies that  $\Pr(F \Box \rightarrow H) = n$  is equivalent to  $F \Box \rightarrow (\Pr(H) = n)$  and that, at the very least, is intelligible.<sup>7</sup> For Todd’s account, we know that  $\Pr(R) = 0$  but it is unclear what object we are assigning a positive credence to. It cannot not be the proposition about present tendencies because our credence in that proposition need not be equal to our credence in rain tomorrow (e.g. we might assign a credence of .95 to the proposition *that the world is tending towards rain tomorrow with a likelihood of .60*). What is a credence in rain tomorrow if not a credence in *that it will rain tomorrow*? Todd doesn’t tell us.

## 4 Future Scepticism and the Extent of Future Contingents

Another serious problem with Peirceanism is that it leads to future scepticism. Future scepticism is the view that we fail to know any ordinary, contingent propositions about the future like that a dropped basketball will bounce or that we will survive the next hour. Our best scientific theories maintain that there exists a possible, yet highly unlikely, future compatible with the past and the laws in which the basketball tunnels through the floor when dropped, or I drop dead or otherwise pop out of existence in the next hour. If we grant that it is contingent that the dropped basketball will bounce and that I will survive the next hour, as I think we should, then, according to Peirceanism, they are false, and so are not known. Again, Todd’s account makes no progress on this front since what robs us of knowledge is the falsity of future contingents and, on this issue, Todd agrees with the Peircean.

Todd does not think that his account entails widespread future scepticism because he has a restricted notion of what propositions count as future contingents, writing off worries about “quantum tunneling this, quantum entanglement that” (p.197). He writes:

<sup>7</sup>See Lewis (1973, Section 8) and Bennett (2003, p.251). Lewis (1973, Section 8) denies that ‘the probability that  $C$  if it were the case that  $A$  is  $n$ ’ is always equivalent to  $A \Box \rightarrow (\Pr(C) = n)$  citing a case in which the truth of the antecedent would have a distorting effect on one’s credence in the consequent. But his more complicated proposal that avoids this consequence assigns a distinct object of credence as compared to one’s credence in  $A \Box \rightarrow C$ .

I am, like any reasonable person, prepared to let the physicists say what the laws of physics permit. However, unlike many reasonable people, I am prepared to insist that, if the laws of physics permit me to become president of Nigeria within the hour, then the laws of physics are not all the laws that there are. For it is not genuinely possible, causally speaking, that I should become president of Nigeria within the hour. If the laws of physics permit this, then there must be other laws that do not, laws that do not simply reduce to those laws—e.g., the laws of psychology. (p.198).

One could, perhaps, appeal to irreducible laws of psychology to rule out the possibility in which Todd becomes president of Nigeria within an hour, but this strategy seems unpromising for ruling out future oddities compatible with the laws of physics across the board, such as the basketball tunnelling through the floor and me popping out of existence in an hour. It isn't clear what laws, other than the laws of physics, we could appeal to to rule out these possibilities. If one wishes to maintain that all future contingents are false, yet avoid future scepticism, one needs to maintain the many propositions about the future that we ordinarily take ourselves to know are necessary given the past and the laws (and, hence, not false). This requires positing a distinction between events compatible with the laws of physics that are deemed contingent, such as whether a particular atom will decay tomorrow, and those events compatible with the laws of physics that are deemed necessary, such as the basketball bouncing off the floor rather than tunnelling through it. However, I am sceptical that any non-*ad hoc* and scientifically respectable distinction can be made that allows the Peircean to preserve ordinary knowledge of the future, while maintaining that the future contains substantial contingencies.

## 5 Conclusion

This book provides a thorough, intriguing, and compelling account of how the future may be genuinely open. Todd's fully articulated and skilfully defended position deserves serious consideration and successfully revitalizes the view that all future contingents are false. The book outlines a coherent and interdependent package in which a metaphysical account of the future as yet to be written motivates and underpins a thoroughly developed semantics of 'will' claims. Todd adeptly marshals arguments drawn from the metaphysics of time, linguistics, and philosophical logic in defence of an intriguing, yet controversial thesis. Unlike Todd, I take it to be true that the book will make a substantial and lasting contribution to the philosophy of time and will be debated and discussed for many years to come.<sup>8</sup>

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