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‘Will’ Is Not a Neg-Raising Modal

A Review of Todd (2021)

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Patrick Todd’s book *The Open Future: Why Future Contingents Are All False* is a courageous attempt to revive, elaborate, and defend a position in philosophical logic that had seemed dead for decades. Having been inspired by (??) and (??), Todd reanimates the view that future tense is a form of necessity. To say that an event *will* occur is to say that it is, in a sense, decided; as Todd puts it, this event takes place in all *available* futures. Todd supplements this with a metaphysical claim that the future is open only if more than one future is available, and he concludes that all propositions regarding the contingent future are false.

Having stated his metaphysical and semantic credo (Chapters 1 and 2), he defends his project against various semantic (Chapter 3) and pragmatic (Chapters 6 and 8) objections. He also argues that his theoretical project is preferable when future-oriented talk is considered in relation to counterfactuals (Chapter 4) and divine omniscience (Chapters 5 and 7). This is an extensive project from which the reader can learn a lot about not only the subject of the open future but also about many neighboring fields. Todd’s book is not a textbook on the subject of future contingents but a defense of a very specific position. Nevertheless, the book is written in an approachable and entertaining manner, so even a reader new to the field will enjoy it. If you are looking for a more detailed summary of the book, I recommend (?). Here, I will focus on what I perceive as its weak points.

Strong modal readings of ‘will’ have largely been abandoned in philosophical semantics as they seem to conflict with much of our talk and thought about the future. Todd attempts to show that this conflict is often apparent; but, to his credit, more than once he accepts that his best strategy is to bite the bullet and concede that his position is not quite the embodiment of common sense (for a list of such bullets, see ?). At times like that, he often stresses his idealistic motivation: if the Open Future requires certain concessions,

these concessions are worth making (for an alternative view on what the open future metaphysics requires on the semantic ground, see ?).

I have my doubts regarding the metaphysical part of Todd's project, but in what follows I want to focus on its semantic aspect. The book's main theses include the following two: that 'will' is a strong modal, and a lot of evidence to the contrary can be explained by the fact that it is also a neg-raiser. I am going to argue that 'will' is neither of these. Let us begin with the second, more technical claim, but the two arguments are independent, so the next two sections can also be read in reverse order.

'Will' Is Not a Neg-Raiser

Neg-raising is a concept in philosophy of language and linguistics utilized to explain why a wide-scope negation is systematically interpreted as a narrow-scope one in certain contexts. For example, when you say, "John doesn't believe that COVID is real", you strongly imply that he believes it is unreal, even though, strictly speaking, what you say is consistent with John being agnostic about COVID. 'Should', 'want', 'think', and many other terms behave similarly. One explanation is that in many contexts the relevant domain (e.g., all situations consistent with one's beliefs) is assumed to be homogeneous with respect to the proposition considered: the proposition is assumed to be universally true or universally false. In such a case, it makes no difference whether the scope of negation is wide or narrow. For example, we tend to assume that John has made up his mind about COVID – this is the homogeneity assumption – and thus, if he does not believe that COVID is real, he must believe that it is unreal. However, homogeneity is not a mandatory assumption, and it can be revoked in contexts in which suspension or absence of belief is a viable option.

Todd draws an analogy between 'should', 'want' and 'believe' (all of which, by the way, can be viewed as strong modals) and argues that 'will' should be added to the list of traditional neg-raisers. In his view, we tend to confuse:

1. "It is not the case that there will be a sea battle tomorrow" (which he encodes as $\neg F_1 p$, where F_1 stands for a metric tense operator – one unit of time hence, it will be the case that), with
2. "It will be the case tomorrow that there is no sea battle" (formally, $F_1 \neg p$).

This is because we naturally assume that there is a single future course of events that decides the issue one way or the other – this guarantees homogeneity of the domain of available futures by reducing it to a singleton set. For this reason, the scope of the tense operator makes no real semantic difference and can be safely ignored. Only when we reject this implicit metaphysical assumption, as Todd's Open Future doctrine does, the scope difference comes to the fore and we appreciate the difference between $\neg F_1 p$ and $F_1 \neg p$. In particular, we might then realize that when p is a future contingency, $F_1 \neg p$ is false, while $\neg F_1 p$ is true.

This line of thought helps Todd explain some controversial consequences of his theory. Consider:

(iii) There will be a sea battle tomorrow or there will be no sea battle tomorrow.

Todd tries to convince the reader that this proposition is false (when encoded as $F_1 p \vee F_1 \neg p$) since both disjuncts are false future contingents. However, to a pre-theoretical ear, (iii) sounds very much like tautology. To explain this away, Todd points to neg-raising, which makes us confuse the false proposition $F_1 \neg p$ with the true proposition $\neg F_1 p$ and read $F_1 p \vee F_1 \neg p$ as $F_1 p \vee \neg F_1 p$ (which indeed is an instance of the law of excluded middle).

Initially, I was rather satisfied with Todd's line of thought. It was good to learn that the metaphysical position that presupposes a unique future – so-called Ockhamism, which I have defended elsewhere – is so deeply embedded in our common sense conception of the world. Unfortunately, I have concluded that this argument cannot be used in favor of Ockhamism because Todd's neg-raising hypothesis is not correct. The problem is that his explanation is limited to metric tense operators, and it fails when the ordinary tense operator is considered. Look at the following.

(iv) It will not rain in Death Valley.

This sentence should sound highly ambiguous, as it can be encoded as $F\neg p$ or $\neg Fp$, but these two have very different truth conditions, even in the actualist setting. The latter is much stronger as it states that

(IVa) No moment in the actual future features rain in Death Valley ($\neg Fp$),

while the former merely states that

(IVb) Some moment in the actual future features a lack of rain in Death Valley ($F\neg p$).

But such ambiguity is not inherent in (iv), and it is clear that (IVa) encapsulates its truth conditions accurately. Certainly, the relevant future period is usually contextually or explicitly limited, but the wide scope reading of negation prevails; e.g., “It will not rain next week” is understood as *it is not the case that* at any time next week it will rain. Thus, ‘will’ is not a neg-raiser, and negation is processed *before* the ‘will’ operator even when ‘will’ precedes ‘not’ in the surface structure (like it does in “It will not rain”).

It is easy to miss this point if one focuses, as Todd does, on the metric tenses. Their semantic interpretation explicitly limits the range of the future operator to a single future moment, e.g., the moment exactly one hour hence. For this reason, we can safely set aside the issue of scope, as $F_1\neg p$ and $\neg F_1 p$ both express the same thought. Nonetheless, the metric F_1 is not a representative example of the ‘will’ family. In particular, in the case of tense operators whose interpretation is not limited to a single moment of time, the scope makes a difference, even in the actualist setting, and the wide-scope reading of negation trumps the narrow-scope one. Thus, ‘will’ is not a neg-raiser and for this reason “There will be a sea-battle next week” and “There will not be a sea-battle next week” are not both false.

112 ‘Will’ Is Not a Strong Modal

Quite independently of the previous point on neg-raising, there are good reasons to be skeptical about Todd’s “modal” analysis of ‘will’. In his view, future tense is a sort of compound modality whose semantics involves existential quantification over times and universal quantification over worlds. “It will rain” is true if it rains at *some* later point in *every* available future (see ?, fn. 5). In general,

FA is true iff A is true at some later time in every available future.

As we shall see, such a compound analysis is on the wrong track. Let us begin with a simple example:

(vii) LeBron James will not play basketball this year.

This complex proposition clearly looks like the result of some interaction between future tense and negation. In Todd’s account, we have two options

130 at our disposal: (vii) can be encoded as $\neg Fp$ or $F\neg p$. The first sentence says
131 that:

132 (VIIa) It is not the case that in all available futures LeBron James
133 plays basketball at some time.

134 The second sentence expresses the thought that

135 (VIIb) In every available future LeBron James does not play bas-
136 ketball at some time.

137 Some authors have worried that this is problematic since we do not hear (vii)
138 as semantically ambiguous (?; ?; ?). However, the problem runs even deeper
139 as neither (VIIa) nor (VIIb) captures the truth conditions of the original
140 sentence!

141 Sentence (vii) does not express the thought that LeBron’s absence from the
142 basketball court is merely a possibility. Neither does it express the thought
143 that, in every possible future, LeBron will take at least a short break from
144 hooping this year.

145 Then, neither $\neg Fp$ nor $F\neg p$ captures the meaning of (vii), while these are
146 the only two options available to Todd. This is not to say that (vii) cannot be
147 heard with some modal undertones – that it is, in some sense, settled that
148 LeBron has to take a break from the game (e.g., because of an injury). One
149 can capture this thought with the following truth conditions:

150 (VIIc) In no available future LeBron James plays basketball at any
151 time this year.

152 Todd’s problem is that no sentence in his language has the truth conditions
153 specified in (VIIc).

154 This particular issue can be averted by introducing a *completely new* tempo-
155 ral operator. For example, Prior’s Peircean G would do the job:

156 GA is true iff A is true in all available future continuations, at all
157 times (within a contextually limited period).

158 With G at our disposal, we can capture (VIIc), which is the intended modal
159 meaning of (vii), with $G\neg p$. It would then be natural to suspect that when
160 ‘will not’ is captured by $G\neg$, ‘will’ corresponds to G , but this suspicion would
161 be wrong. For example,

(viii) LeBron will play basketball this year.

certainly *should not* be encoded as Gp , whose truth conditions are:

(VIIIa) LeBron James plays basketball this year at all times in all available futures.

Surely, this is too strong a reading of ‘will’. The common modalist will be happy to capture (viii) with Fp , whose truth conditions are the following:

(VIIb) In every available future there is a time this year at which LeBron James plays basketball.

Therefore, in Todd’s account $G\neg$ stands for ‘will not’, and F stands for ‘will’, while it is a known fact that F and G are not mutually definable (it was observed already in ? ch. 7). Thus, we arrive at the staggering consequence that the meaning of ‘will not’ *is not* a result of putting together the meanings of ‘will’ and ‘not’! This is a heavy price to pay, as theoretical parsimony privileges a more unified theory.

The essence of the problem is that Todd’s analysis of ‘will’ blends two quantifiers into a single operator. Therefore, negation can either precede or succeed both of them, while neither option is correct. The modalized reading of ‘will not’ demands negation to be squeezed between the modal and the temporal quantifier. However, this cannot be done compositionally, which strongly suggests that modality should not be infused into the meaning of ‘will’.¹

Observe that the problem of compositionality does not arise if we reject Todd’s central thesis and accept that ‘will’ is not a modal. Let us define an operator f , which has no modal component and whose only role is to shift forward the evaluation time.

fA is true iff A is true at some future moment.

Then, (vii) and (viii) can be encoded by $\neg fp$ and fp , respectively, and their truth conditions are rather uncontroversial. The first says that at no future moment (until the end of this year) will LeBron James play basketball, while the second says that at some future moment (until the end of this year) LeBron

1 Once again, Todd might have easily missed this problem because of his focus on metric operators whose interpretation is limited to a single instant. For those, $F_1\neg A$ is equivalent to $G_1\neg A$, but this equivalence does not hold in general.

James will play basketball. Also, the meaning of 'will not' is a direct result of composing the meanings of 'will' and 'not'. In addition, in the linear semantics of will, (iii) can be encoded as $f_1 p \vee \neg f_1 p$, which is clearly a valid substitution of the law of excluded middle (which explains why it sounds like tautology to many). However, the consequence of this proposal is that some future contingents are true, and I have learned that many people, including Patrick Todd, have a hard time accepting this.

As a consolation to modalists who recognize some necessity inherent to (vii) and (viii), it should be noted that this sense *can* be captured within the framework of the non-modal analysis of 'will'. To this effect, a future-tensed sentence should be supplemented with an "external" element of necessity.

One simple (not to say oversimplified) way to do this is to use an explicitly modal operator *Sett* that stands for something like 'it is settled that' [which means true in every relevant future possibility; such a modal operator is independently useful for reasoning on temporal modalities as showed in (?); (?)]. Observe that when (vii) and (viii) are understood as $Sett \neg f p$ and $Sett f p$, respectively, their truth conditions are, as desired, the modally loaded (VIc) and (VIIIb). Moreover, when $f p$ is a future contingent, then both $Sett f p$ and $Sett \neg f p$ come out false. At the same time, the problem with compositionality does not arise: the intended meanings of these expressions are the direct results of putting together the meanings of negation, the non-modal f , and the modal *Sett*.

For this proposal to work, the semantic, postsemantic, or pragmatic mechanism of prefixing every 'will' sentence with a necessity operator should be further described by the modalists (most likely, this would be a more general linguistic phenomenon that also arises in the case of conditionals). However, this objective seems less demanding than the defense of the original theory, which builds modality into the meaning of the future-tense operator. Thus, future tense and necessity should be separated in semantic theorizing, which is in stark contrast to Todd's proposal (for additional arguments to the same effect, cf., ? ch. 4).

This brings us to the last remark, which is more of a hint to the future reader. What I have written so far might be viewed as a blatant rejection of Todd's proposal, but there is a more charitable approach that helped me more than once during my study of the book. When something that Todd states about the behavior of 'will' sounds very peculiar, perform this simple interpretative trick: replace every use of 'will' with 'inevitably will', 'unavoidably will', 'decidedly will', or something along these lines. More often than not,

this simple maneuver will bring everything back in order and turn a highly controversial thesis into a common-sense observation. For example, you may hear Todd at the beginning of June 2024 endorsing the following statement.

(ix) It will be that either Dallas Mavericks or Boston Celtics are the NBA champions in 2024, but neither Mavericks will be the champions nor Celtics will be the champions.

If you, like me, struggle to process this seemingly contradictory statement, just replace ‘will’ with ‘inevitably will’, and everything is back in order. You will notice that (ix) is just an unusual way to say that Dallas will play Boston in the 2024 NBA finals, and both teams have a chance of being victorious. You should be warned that Todd vigorously insists that his ‘will’ does not mean ‘inevitably will’, but if you follow my hermeneutic suggestion, you might find the book even more instructive and enjoyable.*

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