Assessment Sensitivity about Future Contingents, Vindication and Self-Refutation

Corine Besson and Anandi Hattiangadi

September 2019

Abstract
John MacFarlane has recently argued that his brand of truth relativism – Assessment Sensitivity – provides the best solution to the puzzle of future contingents: statements about the future that are metaphysically neither necessary nor impossible. In this paper, we show that even if we grant all of the metaphysical, semantic and pragmatic assumptions in terms of which MacFarlane sets and solves the puzzle, Assessment Sensitivity is ultimately self-refuting.

Section 1. Introduction

In several recent works, John MacFarlane (2003, 2008, 2014) appeals to his distinctive brand of relativism about truth – *Assessment Sensitivity* – to resolve the puzzle of future contingents: statements about the future that are neither necessary nor impossible, such as 'There will be a sea battle tomorrow'. The way MacFarlane sets it up, at the heart of the puzzle lies a metaphysical assumption that he explicitly endorses: that the future is objectively open or unsettled.

Now suppose that it is today objectively unsettled whether there will be a sea battle tomorrow; in some possible futures there is a sea battle, in others there is peace. According to MacFarlane, when we evaluate a current assertion of the proposition 'There will be a sea battle tomorrow', we have clashing intuitions. From today's perspective, the assertion strikes us as neither true nor false: it is true in some possible futures, but not in others – we have an 'indeterminacy intuition'. Yet if we fast forward to the future, and view the previous day's assertion from the midst of a sea battle, the assertion strikes us as true – we have a 'determinacy intuition'. These intuitions seem to

lead to an incompatibility since the same assertion seems to be neither true nor false at some point and true at a later point.

As MacFarlane sees it, 'a satisfactory account of future contingents must give both intuitions their due (2003: 321-232),' and Assessment Sensitivity is apt to do so. MacFarlane often contrasts his own semantics with Supervaluationism, the rival semantics that is most structurally similar to his own, and of which indeed the latter can be seen as an extension. While both semantics seem to be able to account for the puzzle of future contingents the way MacFarlane sets it up, the two theories are importantly different.[1] As we shall see, one distinctive feature of Assessment Sensitivity is that the assessment sensitivity any ordinary proposition P gives rise to the assessment sensitivity of the truth predicate in a sentence such as 'P is true'. In contrast, according to Supervaluationism, though P may be true by their definitions ('supertrue'), 'P is true' need not be true in this way. Below, we will show that Assessment Sensitivity is self-refuting, and what is more, that the lack of possible fallback strategies for Assessment Sensitivity stems precisely from the assessment sensitivity of ´P is true´. This leaves Supervaluationism at a dialectical advantage.[2]

Section 2 outlines the Assessment Sensitivity solution to the puzzle and compares it briefly with the supervaluationist one. Section 3 shows that, while sophisticated, it cannot be 'vindicated' and in fact is self-refuting – two charges that we will define precisely. Section 4 considers and rejects three potential responses to the objection. Finally, Section 5 comes back to Supervaluationism and shows how, in light of the discussion in Section 4, it is at a dialectical advantage over Assessment Sensitivity.

---

[1] In his (2003) MacFarlane puts forward several objections to Supervaluationism in relation to future contingents. These are retracted in his (2008), where he claims that the superiority of Assessment Sensitivity over Supervaluationism is salient only in its treatment of the operator 'actually', which is not germane to the treatment of future contingents. See García-Carpintero (2013) for a critical discussion of the claim that Assessment Sensitivity's treatment of 'actually' is superior to Supervaluationism.

[2] We thus leave aside other possible solutions to the puzzle of future contingents. See for instance our (2014 and forthcoming). See also Torre (2011) for a recent helpful survey and critical discussions of other possible semantic accounts of future contingents.

## Section 2. The Problem of Future Contingents

A natural way of fleshing out the idea that the future is objectively unsettled, which MacFarlane appeals to, is through so-called 'Branch Theory' (see e.g. Belnap and Green 1994), an eternalist theory of time where past, present and future are equally real; and where time is like a rootless tree, with a single trunk representing the settled past, and multiple branches representing the unsettled future. On this view, there is an asymmetry between the past and present on the one hand and the future on the other: while there is at any moment a unique past and present, there are multiple future branches that are ontologically on a par. The future is objectively unsettled because no future is singled out as *the* future of the world.[3]

Now, suppose that on Monday it is objectively unsettled whether a sea battle will occur on Tuesday and that Alice utters the following contingent, future tensed sentence:

(1) There will be a sea battle tomorrow.

The situation is represented by *Figure 1*:

Figure 1
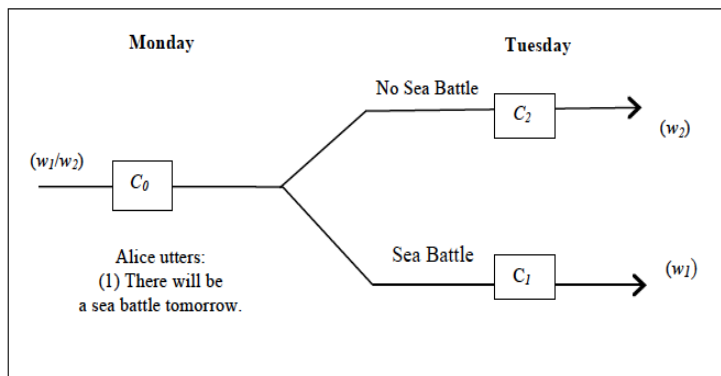
Here, w_1 and w_2 are distinct possible worlds that are qualitatively identical in their past and present, but which represent different ways the future might be: at w_1 a sea battle occurs on Tuesday, but not at w_2. Here we suppose with MacFarlane that for every

---

[3] See MacFarlane (2003, 2005).

world, it is determinate at that world which way the future is at that world. C_0, C_1 and C_2 are particular contexts – sets of parameter values, including worlds, agents, locations and times.

For convenience, let '$W(C_i)$' denote the set of worlds contained in a context C_i (where 'C_i' is a variable for contexts), such that: at C_0, it is unsettled whether there is a sea battle on Tuesday, since both w_1 and w_2 are in $W(C_0)$. At C_1 it is settled that there is a sea battle since only w_1 is in $W(C_1)$; and at C_2 it is settled that there is no sea battle since only w_2 is in $W(C_2)$.

Against this metaphysical background, we are meant to be torn between two intuitions when we evaluate Alice's assertion: on Monday (at C_0), we are in the grip of **Indeterminacy**, while on Tuesday (at C_1 or C_2), we are in the grip of **Determinacy**.

> **Indeterminacy.** What Alice said is neither true nor false.
> **Determinacy**. What Alice said was true (false).

Indeterminacy and **Determinacy** conflict: what Alice said cannot both lack a truth value and be true (false).

Nevertheless, MacFarlane offers a way to give both intuitions their due by appealing to Assessment Sensitivity, on which Alice's assertion of (1) comes out as neither true nor false, and so incorrect, at C_0, but true and so correct C_1. Here is how the account goes.

MacFarlane first defines an assessment sensitive truth predicate in terms of two key notions: a *context of utterance*: a set of parameter values, including worlds, agents, locations, times, representing the circumstances in which a sentence is uttered; and a *context of assessment*: a set of shiftable parameters from the context of utterance representing the perspective from which an asserted proposition can be assessed (MacFarlane, 2014: 78). This truth predicate applies to propositions (understood as sets of worlds). It is defined for future contingent propositions as follows (2014: 151):

Relativist Postsemantics for Truth (RPT). A proposition ϕ is true as used at C_i and as assessed at C_j iff for every $w \in W(C_i, C_j)$, ϕ is true at w,

where $W(C_i, C_j) = W(C_j)$ if $W(C_j) \subset W(C_i)$

and $W(C_i)$ otherwise.

Given that the semantics is non-bivalent, falsity is not the dual of truth, but can be defined as truth of the negation, as follows:

Relativist Postsemantics for Falsehood (RPF). A proposition ϕ is false as used at C_i and as assessed at C_j iff for every world $w \in W(C_i, C_j)$, ϕ is false at w,

where $W(C_i, C_j) = W(C_j)$ if $W(C_j) \subset W(C_i)$

and $W(C_i)$ otherwise

Second, MacFarlane articulates norms of assertion to explain both our intuitions about the accuracy and inaccuracy of assertions of future contingents. Roughly, assertions are appropriate at a context of utterance and assessment iff they are accurate relative to both contexts:

Accuracy. An attitude or speech act occurring at C_i is accurate as assessed from a context C_j iff its content [proposition] is true as used at C_i and assessed from C_j. (MacFarlane 2014: 127)

For McFarlane, inaccuracy is the denial of **Accuracy** – for an assertion to be inaccurate, it is sufficient that it is not true as used at C_i and assessed from C_j, in which case it should be rejected:

Retraction Rule. An agent in context C_j is required to retract an (unretracted) assertion of p made at C_i if p is not true as used at C_i and assessed at C_j. (MacFarlane 2014: 108)

With this in place, Assessment Sensitivity purports to give **Indeterminacy** its due as follows. Given **RPT**, the proposition that there is a sea battle on Tuesday when used at

C_0 and assessed at C_0 is not true, since it is not true at w_2 and so is not true at all worlds $w \in W(C_0, C_0)$. Given **RPF**, the proposition that there will be a sea battle on Tuesday when used at C_0 and assessed at C_0 is not false, since it is not false at all worlds $w \in W(C_0, C_0)$. Thus, the proposition that there is a sea battle on Tuesday is neither true nor false when used and assessed at C_0.

Furthermore, given **Accuracy**, Alice's assertion of (1) is inaccurate when assessed at C_0, since the proposition that Alice expresses in asserting (1) is not true as used at C_0 and assessed at C_0. Given **Retraction Rule**, Alice ought to retract her assertion of (1) if she is challenged at C_0 while it is still open that there will be no sea battle on Tuesday.

Determinacy is given its due as follows. Given **RPT**, the proposition that there is a sea battle on Tuesday is true when used at C_0 and assessed from C_1 since it is true at every world $w \in W(C_0, C_1)$. Given **Accuracy**, Alice's assertion is accurate when assessed at C_1, since the proposition it expresses is true at C_1, and given **Retraction Rule**, she is not obligated to retract her (unretracted) assertion of (1) if she is challenged at C_1.

Thus, Assessment Sensitivity seems to give both **Indeterminacy** and **Determinacy** their due: it entails that what Alice said was neither true nor false when assessed at C_0, yet it is true when assessed at C_1; when assessed at C_0, Alice's assertion is inaccurate and should be retracted, but not when assessed at C_1.

Now for contrast, consider what would be a standard statement of Supervaluationism applied to our puzzle of future contingents (See Thomason 1970, García-Carpintero 2008). On this semantics truth, or supertruth, requires the truth of a propositions at all the worlds of the context of utterance:

> **Supervaluationism**: A proposition ϕ is supertrue at a context of utterance C iff ϕ is true at every world $w \in W(C)$, and ϕ is superfalse at a context of utterance C iff ϕ is false at every world $w \in W(C)$

Supervaluationism is in a way Assessment Sensitivity minus contexts of assessments: there is only one context parameter, which is the context of utterance.[4] Like Assessment Sensitivity, Supervaluationism gives **Indeterminacy** its due in that it entails that what Alice says is neither supertrue nor superfalse: at C_0, there are both worlds at which a sea battle occurs and worlds where no sea battle occurs. Supervaluationism can also give **Determinacy** its due if **Determinacy** is interpreted as the intuition that the very proposition expressed in (1) is true: the proposition *that there is a sea battle on Tuesday* is true, as uttered on Tuesday. This requires, somewhat controversially, that the truth-predicate used to state **Determinacy** be tenseless, an assumption that MacFarlane endorses too.[5]

The discussion of Supervaluationism will become useful when we consider contemporary assessments of assertions of future contingents – such as a contemporary assessment of Alice's utterance of (1). Given that this is precisely such assessments that we think lead to the problem of vindication and the charge of self-refutation for Assessment Sensitivity, we present our argument first and then come back to Supervaluationism.

Section 3. Self-Refutation and Vindication

Roughly put, a theory is self-refuting if it can be 'turned against itself' (Kölbel 2011:11). Here, more precisely, we are concerned with strict self-refutation, which we define as follows:

> **Strict Self-Refutation.** A theory T is strictly self-refuting iff the content of T, on its own or together with other plausible assumptions, entails T's falsity.

---

[4] We will stick to the labels 'supertrue' and 'superfalse' to clearly demarcate Supervaluationism from Assessment Sensitivity, even though the latter is an extension of the former.

[5] See MacFarlane (2008, sct 8 for details). See Heck (2006) for criticism of this assumption that the truth predicate is tenseless directly addressed at Assessment Sensitivity's treatment of future contingents. MacFarlane once argued (2003) that Supervaluationism could not give its due to **Determinacy**, precisely because of the lack of an assessment context parameter. This was largely due to the fact that he was then working with the notion of an utterance as the primary bearer of truth, not that of a proposition.

For instance, the proposition that I know that I know nothing is strictly self-refuting given the plausible assumption that knowledge is factive: the proposition that I know that I know nothing then entails that I know nothing, which entails that I do not know that I know nothing (Kölbel 2011).

We now argue that Assessment Sensitivity strictly refutes itself in connection with its treatment of **Indeterminacy**: our first step is to show that while **RPT** and **RPF** entail that what Alice said is neither true nor false when assessed at (C_0, C_0), which, as we have just seen means that Assessment Sensitivity gives **Indeterminacy** its due, **RPF** however entails that the proposition that *what Alice said is neither true nor false* is false when assessed at (C_0, C_0). Our second step is to show that given some further plausible assumptions, this entails that the conjunction of **RPT** and **RPF** is false.
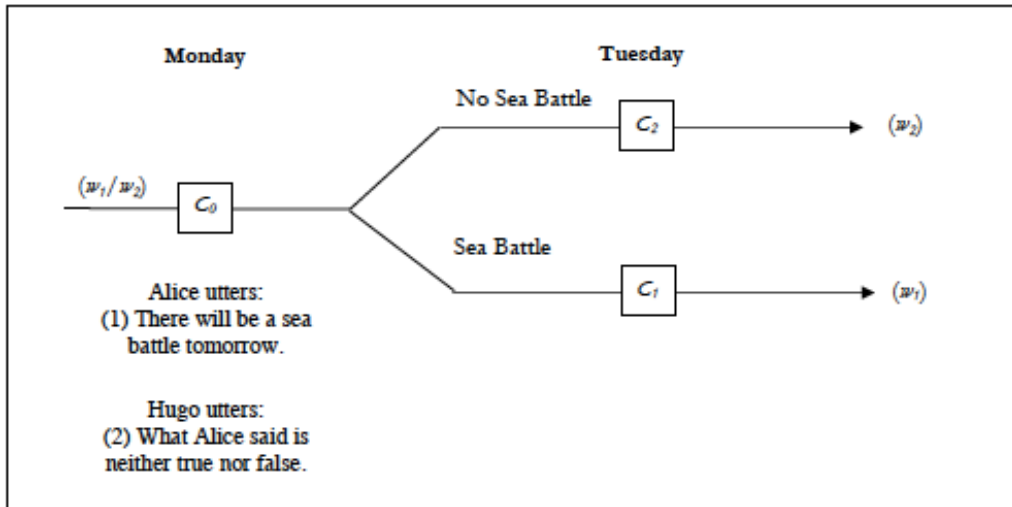
(i) Vindication

Concerning the first step, we can set it up as follows. We can suppose that Hugo witnesses Alice's assertion of (1) on Monday, and gives voice to **Indeterminacy** by asserting the following contemporary assessment of Alice's utterance:

(2) What Alice said is neither true nor false.

This situation is represented in Figure 2.

Figure 2

When applied to Hugo's assertion of (2), **RPF** entails that what Hugo says is *false* when assessed at C_0; where what Hugo asserts at C_0 is the proposition that *what Alice said is neither true nor false* is false at w_1. This is because, given that there is a sea battle at w_1, it is *true* at that world that there is a sea battle on Tuesday, and so assessed from C_1 what Alice said is likewise true; and, given that there is no sea battle at w_2, it is false at that world that there is a sea battle on Tuesday, and so assessed from C_2 what Alice said is false.[6] Since what Hugo says is false at every world $w \in W(C_0, C_0)$, it is false when assessed at C_0. Indeed, since it is false at both w_1 and w_2, what Hugo says is false at *all* contexts of assessment C_0, C_1 and C_2. Call this the 'Vindication Problem':

> **Vindication Problem**. Assessment Relativism fails to vindicate **Indeterminacy** because it fails to entail that a statement of **Indeterminacy** is true.

Indeterminacy entails that what Alice said is neither true nor false when used and assessed at C_0. So we expect that (2), which simply states this, is also *true*: it must be

---

[6] Here we are assuming that if there is in fact a sea battle at a world w, then (assessed at that world) it is true that there is a sea battle at that world. Likewise, if there is in fact no sea battle at a world w, then (assessed at that world) it is false that there is a sea battle at that world. Of course, these assumptions could be challenged, but not only are they extremely natural, they are also invited by MacFarlane's very semantic framework underpinned by its appeal to Branch Theory to model determinacy and indeterminacy, which is then reflected at the semantic level within a truth-value gap setting.

true on Monday that it is neither true nor false on Monday that there will be a sea battle on Tuesday. Yet, not only does the theory fail to show that (2) is true when assessed at C_0, it entails that (2) is *false* when assessed at this context.

This wreaks havoc with the associated theory of assertion: Alice says on Monday that there will be a sea battle on Tuesday. When used and assessed on Monday, what Alice says is neither true nor false. Yet, if Hugo asserts on Monday that what Alice just said is neither true nor false, thereby challenging her assertion, what he says is *false* when it is assessed on Monday. Thus, by **Accuracy**, Hugo's assertion is inaccurate; by **Retraction Rule**, if Hugo's assertion were to be challenged, he would be obligated to retract it, since the proposition he asserts is false when used and assessed on Monday.

(ii) Self-Refutation

So much for vindication, the first step in our argument against Assessment Sensitivity. Now to the second step, which concerns self-refutation. The vindication problem can be developed into a strict self-refutation charge given the following further plausible assumption:

F1. The proposition that ϕ is false $\rightarrow \neg \phi$.

F1 is an extremely natural assumption that one would be hard-pressed to give up, since it captures a core feature of our intuitive understanding of falsehood as truth of negation. Moreover, **F1** fits with Assessment Sensitivity, since given **RPF**, every instance of **F1** holds at every context of use and context of assessment.

Now, let **RP** be the conjunction of **RPT** and **RPF** and let P be the following proposition:

(P) *What Alice said is neither true nor false*.

The Strict Self-Refutation Argument against **RP** goes as follows.

The Strict Self-Refutation Argument Against RP

(i) **RP**	(Assumption)
(ii) **RP** $\rightarrow$ P	(**RP** applied to Alice's assertion (1))
(iii) **RP** $\rightarrow$ *False*(P)	(**RP** applied to Hugo's assertion (2))
(iv) *False*(P)	((i), (iii), Modus Ponens)
(v) ¬P	((iv), **F1**)
_____	
(vi) ∴ ¬**RP**	((v), (ii), Modus Tollens)

Thus, **RP** refutes itself. More precisely, given the plausible assumption, **RP** refutes itself.

MacFarlane (2008: 97) discusses Supervaluationism in connection with contemporary assessment of utterances of future contingents, the case we have used in our argument against Assessment Sensitivity. He considers the case of someone who says of their own utterance:

(*) 'What I just said (when I said that it would be sunny tomorrow) is not true'.

This claim is true but it does not come out true on a supervaluationist semantics. Given disquotation, which supervaluationists accept, the claim entails that it won't be sunny tomorrow, which is not true given that at the context of utterance there are worlds at which it won't be sunny tomorrow. Thus on such a supervaluationist semantics:

'… one cannot truly utter (*) or its negation.... Thus the semantic fact recorded in the metalanguage by the observation that neither (*) nor its negation is true at such a context is ineffable from the "internal" point of view.'

While it is unclear what exactly MacFarlane means by 'the semantic fact… is ineffable from the "internal" point of view', and he does not elaborate further on what this means,

we can interpret it as follows: a proposition such as (2) cannot be uttered in that the proposition that it expresses cannot be given the intuitively correct truth-value. But this is precisely the vindication charge that we have raised against Assessment Sensitivity. However MacFarlane does not seem to be aware that this very charge also befalls Assessment Sensitivity. Thus, like Assessment Sensitivity, it has a vindication problem. It entails that Hugo's assertion in (2) is superfalse: it is not the case at w_1 that (1) is neither supertrue nor superfalse; and is not the case at w_2 that (1) is neither supertrue nor superfalse.

MacFarlane suggests that the supervaluationist appeals to a determinate truth predicate, and that they rephrase (*) in terms of determinate (super)truth rather than simply in terms of (super)truth.[7] We will consider the prospect of doing so below, both for Assessment Sensitivity and Supervaluationism. Our discussion reveals that it is not quite so straightforward for either semantics to simply reframe the puzzle of future contingents using a determinacy operator.[8]

Section 4. Possible Responses

There are several ways in which the defender of Assessment Sensitivity might respond to the self-refutation charge. Here we mention four seemingly attractive avenues that they might take and show that none is consistent with some key tenet of Assessment sensitivity.

---

[7] See García-Carpintero (2013) for an evaluation of this proposal from a supervaluationist perspective.

[8] In general, provided that we ignore higher-order indeterminacy, Supervaluationism entails that saying of a statement containing a supertruth predicate that it is neither supertrue nor superfalse is itself superfalse. In other words, if a statement P contains a determinacy operator, then P is neither determinately true nor determinately false is determinately false. It is just not possible that if P has this kind of determinacy, it is neither determinately true nor determinately not true that it has. Thus consider the standard case of vagueness. Take the following statement: "that Lucy is bald is supertrue' is neither supertrue nor superfalse'. This statement is itself superfalse: if Lucy is bald is supertrue, it is determinately the case that she is bald. In this case it is determinate that there can't be any indeterminacy about whether she is determinately bald. That is, it is determinately false that there is not such indeterminacy about her determinate baldness.

(i) Determinate Truth and Determinate Falsehood

First, one might defend the view by reframing the puzzle of future contingents in terms of determinate truth rather than simply truth,[9] and of then arguing that the indeterminacy intuition – call it **Indeterminacy*** – should be better understood as the intuition that (1) is neither determinately true nor determinately false, where determinate truth and falsity can be understood as follows:

> **Determinate Truth.** A proposition ϕ is *determinately true* at C_i iff for every $w \in W(C_i, C_j)$, ϕ is true at w,
>
> $$\text{where } W(C_i, C_j) = W(C_j) \text{ if } W(C_j) \subset W(C_i)$$
> $$\text{and } W(C_i) \text{ otherwise.}$$

> **Determinate Falsehood.** A proposition ϕ is *determinately false* at C_i iff for every $w \in W(C_i, C_j)$, ϕ is false at w,
>
> $$\text{where } W(C_i, C_j) = W(C_j) \text{ if } W(C_j) \subset W(C_i)$$
> $$\text{and } W(C_i) \text{ otherwise.}$$

Given this semantic set up, suppose now that when Hugo asserts (2) on Monday, he *in fact* expresses the proposition (P_{DET}) – where the determinacy operator attaches to the truth predicates:

> (P_{DET}) *What Alice said is neither determinately true nor determinately false.*

That is to say, in full the claim made in (P_{DET}) is that: the proposition that there will be a sea battle tomorrow [is neither determinately true nor determinately false].

Given **RP**, if the content of Hugo's assertion is (P_{DET}), what he asserts *is* true: when assessed at C_0, what Alice says is not determinately true, since it is not true at every $w \in$

$W(C_0, C_0)$; it is also not determinately false, since it is not false at every $w \in W(C_0, C_0)$. In this setting, the analogue of step (iii) of **The Strict-Refutation Argument Against RP** would say: $\mathbf{RP} \rightarrow \mathit{False}(P_{DET})$. This step is false.

However, first, this proposal radically departs from MacFarlane's original understanding of the puzzle, which involved **Indeterminacy**, not **Indeterminacy***. **Indeterminacy** and **Determinacy** are meant to articulate ordinary intuitions we have about the puzzle of future contingents, ordinary intuitions that we have about openness and closeness of the past present and future. An argument would need to be given as to why, besides it being semantically convenient, such intuitions have to be framed in terms of **Indeterminacy*** and **Determinacy***.[10]

Second, this semantic proposal requires that it is only partially applied. Indeed, step (iii) has been blocked only because, somewhat artificially and in an *ad hoc* manner, we have not applied **Determinate Truth** and **Determinate Falsehood** to the whole of the argument, and in particular not to '*False*' in '*False*(P_{DET})'. But it seems that we should apply **Determinate Truth** and **Determinate Falsehood** throughout the argument, as nothing in the semantic machinery of Assessment Sensitivity so interpreted stops us from doing so. But if we do this, the Strict Self-Refutation Argument can be reformulated. Let $\mathbf{RP_{DET}}$ be the conjunction of **Determinate Truth** and **Determinate Falsehood**. First we get a version of the vindication problem. Given $\mathbf{RP_{DET}}$, the proposition (P_{DET}) is determinately false when assessed at C_0, since it is false at every world $w \in W(C_0)$: it is false at w_1, where there is a sea battle and what Alice said is thus determinately true; it is false at w_2, where there is no sea battle what Alice said is determinately false.[11]

Thirdly, the proposal can be shown to be strictly self-refuting given the following plausible assumption:

---

[10] See our (2014) for further discussion.

[11] Recall here that at each world w, it is determinate which future holds at w.

F2. *Determinately False(ϕ) $\rightarrow \neg \phi$.*

Let RP$_{DET}$ the combination of Determinate Truth and Determinate Falsehood.

The Strict Self-Refutation Argument against RP$_{DET}$

(i) **RP$_{DET}$**	(Assumption)
(ii) **RP$_{DET}$** $\rightarrow$ P$_{DET}$	(**RP$_{DET}$** applied to Alice's assertion (1))
(iii) **RP$_{DET}$** $\rightarrow$ *Det False*(P$_{DET}$)	(**RP$_{DET}$** applied to Hugo's assertion (2))
(iv) *Det False*(P$_{DET}$)	((i), (iii), Modus Ponens)
(v) $\neg$P$_{1\ DET}$	((iv), **F2**)
_____	
(vii) $\therefore$ $\neg$**RP**	((vi), (ii), Modus Tollens)

Thus, **RP$_{DET}$** is self-refuting, and reformulating the original intuition in terms of **Indeterminacy*** does not on its own help to avoid the strict self-refutation charge.

There are other possible routes to avoid the strict self-refutation charge than the one just discussed, that also go by reformulating **Indeterminacy**. Let us consider one briefly here. For instance one might think that **Indeterminacy** should be viewed as rejecting that what Alice said is either true or false rather than as asserting that what she said is neither true nor false. Note that this is only going to block step (iii) of the Strict Self-Refutation Argument against RP if rejection is not the dual of assertion. However, this kind of view severs the conceptual connection between assertion and truth, and rejection and falsity, and the way MacFarlane defines Accuracy and Rejection Rule suggests that he thinks that there is a conceptual connection between assertion, and truth and rejection (Retraction Rule) and non-truth.

(ii) Non Assessment Sensitive Truth Predicate: The Dyadic View

The considerations just made suggest that to avoid the strict self-refutation charge, it must be denied that Assessment Sensitivity (either **RP** or **RP$_{DET}$**) applies to assertions

containing the standard, English or object language, truth predicate, such as that in Hugo's assertion of (2).

For instance, one might reject step (iii) of **The Strict Refutation Argument Against RP** as illicit on the grounds that it requires an application of Assessment Relativism to utterances of sentences containing the truth predicate that Hugo is using. Thus, one might argue that it is not the case that **RP** $\rightarrow$ *False*(P), because Assessment Sensitivity does not apply to propositions expressed by utterances of ordinary English sentences containing a truth predicate.

To do so, one might for instance take truth to be a relation between a proposition and specific parameters, which entails that the predicate 'is true' as it occurs in Hugo's assertion of (2) in fact expresses a dyadic property. On this view, Hugo's assertion of (2) at C_0 expresses the proposition (P_{dyadic}):

(P_{dyadic}) *What Alice said is not true at (C_0, C_0) and not false at (C_0, C_0).*

More precisely, the claim made in (P_{dyadic}) is that: the proposition that there will be a sea battle tomorrow [is neither true-at-*(C_0, C_0)* nor false-at-*(C_0, C_0)*].

Given this account of the truth predicate, all of the foregoing strict self-refutation charges can be avoided. Given **RPT**, (P_{dyadic}) is true at (C_0, C_0), since it is true at every world $w \in W$ (C_0, C_0). While at w_1 there is a sea battle on Tuesday, it is true at w_1 that the proposition that there is a sea battle on Tuesday is neither true nor false when used and assessed at C_0. Similarly, while at w_2 there is no sea battle on Tuesday, it is true at w_2 that the proposition that there is a sea battle on Tuesday is neither true nor false when used and assessed at C_0.

However, treating the English truth predicate as dyadic assessment *in*sensitive predicate in this way is incompatible with the core of McFarlane's relativist account of truth as assessment sensitive. Indeed he articulates one of his key commitment about the English truth predicate as follows:

'What makes one a relativist about truth', MacFarlane says, 'is a commitment to the *assessment sensitivity* of some [p]ropositions (MacFarlane 2014: 52).'

He explains:

'[I]f the language can express any assessment sensitive propositions, "true" will also be assessment sensitive, since if *p* is assessment sensitive, the proposition that *p* is true must be assessment sensitive too (2014:93).'

Thus, MacFarlane takes the English truth predicate to expresses an *assessment sensitive, monadic* property, specified as follows:

Semantics for monadic 'is true' (SMIT). 'True' expresses the same property at every context of use—the property of being true. The extension of this property at a circumstance of evaluation *e* is the set of propositions that are true at *e*. (MacFarlane, 2014:93)

Given this, in general '*p* is true' does not express the proposition that *p is true at* (C_i, C_j); it simply expresses the proposition that *p is true*. Do the dyadic route is fundamentally not one that MacFarlane wishes to take.

Moreover, while this may not be strictly self-refuting, treating the truth predicate as dyadic and therefore absolute does in a certain sense 'turn' MacFarlane's account of future contingents 'against itself', to use our informal way of thinking of thinking of self refutation: if (2) expresses (P_{dyadic}), then it is not only true at (C_0, C_0): it is also true as assessed at C_1, and as assessed at C_2 because it is true at both w_1 and w_2, and hence true at every world $w \in W$ (C_0, C_1) and at every world $w \in W$ (C_0, C_2). There assessment sensitivity to be found there.

(iii) Non Assessment Sensitive Truth Predicate: The Metalinguistic View

Finally, another way to attempt to block **The Strict Refutation Argument Against RP** at step (iii) is to go metalinguistic. On this view, the truth predicate that occurs in Hugo's utterance of (2) is not part of the object language – not part of the ordinary English truth predicate – but part of a metalanguage which is non assessment sensitive. Here, idea that the metalanguage should be non assessment sensitive is motivated by blocking both the vindication problem and the self-refutation charge. If this metalinguistic truth predicate is not itself assessment sensitive, the truth values of sentences containing it do not vary with contexts of assessment. In this setting, Hugo's utterance of (2) does not really express the proposition that *what Alice said is neither true nor false*, but rather the proposition that *what Alice said satisfies 'is neither true nor false'*; where that predicate is non assessment sensitive. The upshot would be that the proposition expressed by (1) is assessment sensitive but that expressed by (2) is not.

The key complaint here is as above, when discussing using a dyadic truth predicate to account for Hugo's utterance in (2): though this move might respect the spirit of **SMIT**, it does so at the cost of the assessment sensitivity of the English language truth predicate, which is at odds with the core thesis of Assessment Relativism. Furthermore, the metalinguistic proposal seems to be a non-starter for reasons that go beyond these theoretical commitments. For the metalinguistic proposal to work, there must be no object language truth predicate in English for Hugo to use—a view that few will find attractive.

Section 5. 'Ineffability', Assessment Sensitivity and Supervaluationism

We think there is little hope for Assessment Sensitivity to escape the vindication problem and strict self-refutation. The view remains 'ineffable', to pick up MacFarlane's phrase again, in a way that makes it wholly objectionable. What of Supervaluationism? The ineffability generalizes to any account with the following

similar non-bivalent structure: an assertion of a future contingent is true at a context only if it is true at every world of that context; it is false at that context only if it is false at every such world. This includes Supervaluationism.

However, supervaluationists may not feel the pressure of the objections raised in Section 3 in the same way as defenders of Assessment Sensitivity. For instance, supervaluationists can coherently deny that Supervaluationism applies to assertions containing the standard, English or object language truth predicate, such as Hugo's assertion of (2). They might argue that their supervaluationist semantics is not designed to apply to propositions expressed by assertions containing the supertruth predicate (or 'determinately true'). They might for instance be attracted to a metaliguistic reply on the grounds that given that the supertruth predicate is perfectly determinate, it is not designed to be treated just like any other expression of English. Thus they may have a good case against step (iii) of **The Strict Refutation Argument Against RP** or, more likely, of **The Strict Refutation Argument Against RP$_{DET}$**, given that supervaluationsts might be tempted to restate the puzzle in terms of **Indeterminacy*** rather than **Indeterminacy**. This would be ill-advised, as we have argued, given the lack of intuitive motivation for such a move, but it seems nonetheless that they have some conceptual space to do so.

Again, this line of response is not open to the defender of Assessment Sensitivity. This is because part of the view is that, as McFarlane explicitly claims that 'P is true', just like 'P', is assessment sensitive: assessment sensitivity applies to any claim in the object, natural, language and that incudes the truth predicate that belongs to it. Thus, Assessment Relativism, unlike Supervaluationism, is specifically designed to account for sentences containing its own truth predicate, and so cannot avoid refuting itself. Given this, it appears that, contrary to what seemed at the end of Section 2, Supervaluationism is at a dialectical advantage over Assessment Sensitivity: giving up on assessment sensitivity for all sentences of English containing a truth predicate is giving up on the core of Assessment Sensitivity. Thus for the defender of Assessment

Sensitivity, the choice seems to be between giving up a core semantic tenet and being vulnerable to the Vindication Problem and the Self-Refutation charge.[12]

Works Cited

Besson, C. and Hattiangadi, A. (forthcoming). 'Assertions and the Future', in S. Goldberg (ed.) *The Oxford Handbook on Assertion*, New York: Oxford University Press: 481-504.

__ (2014). 'The Open Future, Bivalence and Assertion', *Philosophical Studies*, 167: 251-271.

Barnes, E., & Cameron, R. (2009). 'The Open Future: Bivalence, Determinism and Ontology', *Philosophical Studies* 146: 291–309.

__ (2011). Back to the Open Future, *Philosophical Perspectives* 25, 1–26.

Belnap, N. and Green, M. (1994). 'Indeterminism and the Thin Red Line', *Philosophical Perspective* 8: 365-388.

García-Carpintero, M. (2008). 'Relativism, Vagueness, and What is Said', in García-Carpintero, M. & Kölbel, M. (eds), *Relative Truth*, Oxford: Oxford University Press.

__ (2013). 'Relativism, the Open Future, and Propositional Truth', in Correia F. & Iacona A. (eds), *Around the Tree*, Synthese Library, Springer: 1-27.

Heck, R. (2006). 'MacFarlane on Relative Truth', *Philosophical Issues* 16, Philosophy of Language: 88-100.

Kölbel, M. (2011). 'Global Relativism and Self-Refutation', in S.D. Hales (ed.), *A Companion to Relativism*. Oxford: Blackwell: 11-30.

MacFarlane, J. (2003). 'Future Contingents and Relative Truth', *The Philosophical Quarterly* 53: 322-336.

__ (2005). 'Making Sense of Relative Truth', *Proceedings of the Aristotelian Society*, 105: 321–39.

__ (2007). 'Relativism and Disagreement', *Philosophical Studies* 132: 17-31.

__ (2008). 'Truth in the Garden of Forking Paths', in M. Garcia-Carpintero and M. Kölbel (eds), *Relative Truth*, Oxford: Oxford University Press: 81-102.

__ (2014). *Assessment Sensitivity: Relative Truth and its Applications*, Oxford: Oxford University Press.

Thomason. R. H. (1970). 'Indeterminist Time and Truth-Value Gaps'. Theoria 36: 264–281.

Torre, S. (2011). 'The Open Future', *Philosophy Compass*, 6: 360-373.