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Borg's Minimalism and the Problem of Paradox

Abstract: According to Emma Borg, minimalism is (roughly) the view that natural language sentences have truth conditions, and that these truth conditions are fully determined by syntactic structure and lexical content. A principal motivation for her brand of minimalism is that it coheres well with the popular view that semantic competence is underpinned by the cognition of a minimal semantic theory. In this paper, I argue that the liar paradox presents a serious problem for this principal motivation. Two lines of response to the problem are discussed, and difficulties facing those responses are raised. I close by issuing a challenge: to construe the principal motivation for BM in such a way so as to avoid the problem of paradox.

Key words: Borg, minimalism, liar paradox, semantics, meaning, cognitivism

1. Introduction

According to Emma Borg (2004, 2012), minimalism is the view that each well-formed declarative sentence of natural language has a lexico-syntactically determined truth condition. That is, each such sentence has a truth condition, and such truth conditions are fully determined by syntactic structure and lexical content. A principal motivation for Borg's minimalism is roughly that it coheres well with a popular, cognitive account of semantic competence, which I call *cognitivism*, according to which semantic competence is underpinned by the cognition of a minimal semantic theory. In this paper, I shall raise and discuss a problem concerning this principal motivation for Borg's minimalism.

The problem – which I call *the problem of paradox* – arises by consideration of the liar paradox. Consider the liar sentence, λ:

λ is not true.

Without loss of generality, we can treat λ as a sentence of English – perhaps, for example, by treating the letter "λ" as an abbreviation of the definite description:

> the first centrally aligned sentence in the paper "Borg's Minimalism and the Problem of Paradox".

Intuitively, λ is a subject-predicate sentence whose subject denotes λ, and whose predicate is satisfied by whatever is not true. As such, we might initially expect the truth condition of λ to be characterised thus:

(T_λ) "λ is not true" is true if, and only if, λ is not true.

However, (T_λ) quickly leads to a contradiction (by substitution of co-referring terms and by considering cases). So, on pain of inconsistency, (T_λ) must be rejected.

Ultimately, pretty much every theorist of meaning shall have to say something about the liar paradox. And, in the literature, there are a plethora of proposed solutions to the paradox which the theorist of meaning may make use of. But, as we shall see, Borg's minimalist faces a very particular problem in light of the paradox.[1] Roughly, as a result of what I take to be the principal motivation for the view, Borg's minimalist is unable to incorporate proposed solutions to the liar paradox into her semantic theory. If the problem of paradox can be upheld, then the consequences for Borg's minimalism are serious: the principal motivation is undermined.

Before proceeding, let me make a brief caveat. In general, minimalism is understood to be the view that there is very little context sensitivity in the semantics of natural language. For example, Cappelen and Lepore state that the "most salient feature of semantic minimalism is that it recognizes few context sensitive expressions" (2005: 2). Correspondingly, Borg presents her brand of minimalism as being in

[1] This being said, the problem of paradox might be extended to related views, such as those of Larson and Segal (1995) and Laurence (1996), and to views that ground meaning in speakers' causal states (e.g. Davies 1987, Evans 1981), and speakers' dispositional states (e.g. Field 1977).

competition with a variety of views that permit, in one way or another, more context sensitivity than her own. (The views are, in Borg's terminology, indexicalism, contextualism, relativism, and occasionalism.) However, in the present paper, I shall not have anything to say about this particular debate. The problem of paradox arises not as a result of how little context sensitivity Borg's minimalism permits, but rather as a result of the particular way in which it allegedly coheres with the cognitivist account of semantic competence.

The plan of the paper, then, is as follows. In §2, I sketch Borg's minimalism and outline the principal motivation. The latter is cashed out in terms of Borg's commitment to cognitivism and to what I call *the meaning hypothesis*. In §3, I outline the problem of paradox: roughly, there is a straightforward argument from the liar paradox to the rejection of the meaning hypothesis. If the problem can be upheld, the principal motivation is thereby undermined. In §§4-5, I raise difficulties for two possible lines of response to the problem of paradox. I close in §6 by issuing a challenge: to construe the meaning hypothesis in such a way so as to avoid the problem of paradox.

2. Borg's minimalism and the principal motivation

Borg characterises her brand of minimalism, henceforth *BM*, in terms of four definitional claims. I quote:

> (i) Semantic content for well-formed declarative sentences is truth-evaluable content.
>
> (ii) Semantic content for a sentence is fully determined by its syntactic structure and lexical content: the meaning of a sentence is exhausted by the meaning of its parts and their mode of composition.
>
> (iii) There are only a limited number of context-sensitive expressions in natural language.
>
> (iv) Recovery of semantic content is possible without access to current speaker intentions (crudely, grasp of semantic content involves 'word reading' not 'mindreading').
>
> (Borg 2012: 4-5)

Claims (i) and (ii) are taken by Borg (2012: 5f) to represent a formal approach to semantics. Roughly, the idea is that: the sentences, expressions and words of natural language have well-defined syntactic properties; words are assigned lexical contents; and that each sentence has a truth condition that can be derived from its syntactic structure and the lexical contents of its constituent words.

BM permits a small amount of lexico-syntactically driven context sensitivity. The details shall not concern us here.[2] We may simply note that claims (iii) and (iv) provide constraints on the context sensitivity permitted by BM. Claim (iii) tells us that there are few context sensitive expressions in natural language, and claim (iv) places constraints on the features of context that can be appealed to: context sensitive expressions cannot demand an appeal to a speaker's intentions.

It shall prove useful to introduce a little terminology at this juncture. First, let a *semantic theory for L* be a description of what the sentences, expressions and words of L mean(-in-L). Second, let a semantic theory be *correct* just in case it accurately describes those meanings. (Roughly, *"la neige" means(-in-French) snow* is accurate, *"la neige" means(-in-French) grass* is inaccurate.) Third, let a *minimal semantic theory for L* be a semantic theory for L that vindicates claims (i)-(iv) above, in the sense that:

(i′) it yields a truth condition for each well-formed declarative sentence in L.

(ii′) it contains an axiom for each lexical item (roughly, word) in L and an axiom for each mode of composition of L, such that the truth condition for any given sentence of L is entailed by the axioms for the constituents of that sentence and their mode of composition.

(iii′) there are no appeals to context (which can be understood as a finite, ordered, sequence of parameters), except perhaps in the axioms for a few lexical items of L.

(iv′) there are no context parameters for a speaker's intentions.

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[2] See Borg 2004: 147-208.

With this terminology to hand, we can concisely characterise BM as follows:

> *Borg's minimalism (BM)*: the correct semantic theory for a natural language is a minimal semantic theory.

I shall henceforth take this formulation of BM to be canonical.

I take the principal motivation for BM to be roughly that BM coheres well with a popular, cognitive account of semantic competence. I call the account in question *cognitivism*. Roughly, cognitivism states that semantic competence is underpinned by the modular cognition of a minimal semantic theory.[3,4] More precisely: semantic competence with a language, L, is accounted for by the postulation of a module – called the *semantic module* – within the speaker's language faculty, which realises, encodes, processes in line with, or stands in some other suitable relation to, a minimal semantic theory for L. The precise relation in which the semantic module stands to the cognised minimal semantic theory is not stipulated; but, for the sake of concreteness, let us make an assumption about how the relation is to be cashed out.[5]

To this end, let me introduce the idea of a *canonical derivation procedure*. A canonical derivation procedure is a recursive algorithm with which a minimal semantic theory for a language, L, is equipped. The algorithm tells us which inferential steps are taken in deriving the truth condition for any sentence of L from the axioms for the constituents of that sentence and their mode of composition. Let us say that a speaker cognises a particular minimal semantic theory for L, T_{L}, when: her semantic module takes, as input, representations of sentences of L; the module implements the canonical derivation procedure of T_{L}, processing inputs to yield, as outputs, truth conditions of input sentences.

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[3] Borg understands modules as introduced by Fodor (1983); the details shall not concern us here.

[4] See Borg 2004: 74-146, and e.g. Larson and Segal 1995.

[5] I assume that talk of *cognising a semantic theory* is intended to be cognitively real. The problem of paradox relies on this assumption, but not on the particular way that I cash out the relation in the text.

That, in brief outline, is cognitivism: a speaker has semantic competence with L just in case she cognises, in the above sense (or so we are assuming), a minimal semantic theory for L. There are numerous subtleties and complications that have gone unmentioned, but the above picture shall serve our present purposes. In what follows, I assume for the sake of argument that cognitivism is correct.

I cash out the principal motivation, that BM coheres well with cognitivism, as follows: cognitivism leads to a promising hypothesis, which I call *the meaning hypothesis*; and cognitivism and the meaning hypothesis jointly imply BM.[6] Let us turn to the meaning hypothesis.

First, see that there is a substantial question to ask about the relation between semantic competence and linguistic meaning.[7] For example, there is no conceptual, *a priori*, or necessary, requirement that the cognitive mechanism that underpins speakers' linguistic abilities involves (in one way or another) *accurate* specifications of what linguistic expressions mean: facts about meaning need not reflect or depend on any given story about speakers' cognitive mechanisms. As Gross says, one need not commit oneself "to the *convergence* of the meaning-stating project and the project of accounting for semantic competence" (2006: 64). However, according to the meaning hypothesis, the *cognised* semantic theory is (for whatever reason) to be identified with the *correct* semantic theory. Borg, for example, says that

> an interpretation is the right/wrong one if it matches/fails to match the one generated by the semantic theory actually possessed by ordinary speakers. (2010: 35)

Let us characterise the meaning hypothesis more formally as follows.

> *The meaning hypothesis*: the correct semantic theory for a natural language, L, is the semantic theory cognised by speakers of L.

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[6] Borg does not explicitly characterise the motivation in this (or any other) way. However, it is clear that access to the explanatorily potent meaning hypothesis is central to Borg's motivations. See Borg 2004: 74-146; 2012: 11f, 48-72.

[7] See e.g. Gross 2006: 63f, and Patterson's (2009) critique of 'epistemic immanence'.

Notice immediately that, as I said above, cognitivism and the meaning hypothesis jointly imply BM. So, as Borg endorses cognitivism and the meaning hypothesis, her commitment to BM is inevitable.

Is the meaning hypothesis a *promising* hypothesis? It may seem so: it is a simple, natural, and plausible extension of cognitivism. Most importantly, however, the meaning hypothesis is explanatorily potent; it is a theoretically fruitful hypothesis.

Let me provide three examples of this explanatory potency.

(E1) *The learnability of language*. A well-known line of thought says that natural languages are learnable because (give or take a few exceptions) the meaning of every sentence of a given natural language can be ascertained from the meaning of a finite number of lexical items and the grammatical modes of composition. Given the meaning hypothesis, it seems both that we get this putative explanation for free, and that we see *why* this putative explanation is correct. Cognised semantic theories are minimal semantic theories, so they yield truth conditions just from axioms that govern the lexical items and modes of composition (since they vindicate (i′) and (ii′)), and they must be recursively axiomatised (as we are finite creatures). If cognised semantic theories are correct semantic theories, then the compositionality of language (give or take a few exceptions), and thus the learnability of language, was always inevitable.

(E2) *Non-cancellable content*. Linguistic exchanges appear to have non-cancellable content, i.e. conveyed content that cannot be cancelled without commitment to a contradiction. For example, I can say "I said I would come to tea, not that I'd come *on time*" without self-contradiction, but not "I said I would come to tea, not that I would come to tea". It is often held that (literal, linguistic, truth-conditional) meaning can play the role of non-cancellable content. If we accept the meaning hypothesis, we get this account for free. In interpreting a given sentence, there is a particular content that, whatever the linguistic exchange, is output by the semantic module. As such content is used to interpret an

uttered sentence, we would expect it to be non-cancellable from the outset. So the meaning hypothesis provides a notion of meaning that plays the role of non-cancellable content in linguistic exchanges.

(E3) *Linguistic data and grounding*. It is not immediately clear how to use linguistic data to construct and confirm a semantic theory; and it is not immediately clear what makes the correct semantic theory correct. Given the meaning hypothesis, however, these issues can be resolved. Linguistic data must be used to construct a semantic theory that mirrors the cognised semantic theory, a semantic theory is confirmed when we have sufficient evidence that it mirrors the cognised semantic theory, and the so-confirmed semantic theory is correct because (by the meaning hypothesis) the cognised semantic theory is the correct semantic theory.

There appears to be a good reason, then, for the cognitivist to make the meaning hypothesis: in particular, it furnishes her with a number of explanatory benefits.

Here, then, is my official characterisation of the principal motivation for BM.

> *The principal motivation for BM*: the meaning hypothesis is a promising hypothesis, as it is explanatorily potent, as shown by (E1)-(E3); and the meaning hypothesis implies BM.

It is roughly in this sense that I say that BM coheres well with cognitivism: given cognitivism, there is a promising hypothesis that implies BM. We now turn to the problem facing this principal motivation.

3. The problem of paradox

Earlier, we introduced the liar sentence, λ:

λ is not true.

We noted that, initially, one might expect the truth condition of λ to be characterised as follows:

(T_λ) "λ is not true" is true if, and only if, λ is not true.

However, (T_λ) quickly yields a contradiction and must, on pain of inconsistency, be rejected.

In the present section, I outline the problem that the liar paradox poses to BM (or, more precisely, to its principle motivation). Let me begin with a concise statement the problem. (I remind the reader that we are assuming cognitivism.)

> *The problem of paradox*: the liar paradox shows that speakers cognise inconsistent minimal semantic theories (i.e. they yield something like (T_λ) as a truth condition for λ). As inconsistent semantic theories cannot be true,[8] and as correct semantic theories are true, it follows that the meaning hypothesis is false. This directly undermines the principal motivation for BM.

Notice the following about this formulation of the problem: the liar paradox is taken to show us something about the *cognised* semantic theory – i.e. that it is inconsistent – , but it is not taken to show us anything about the *correct* semantic theory. That is, the liar paradox is taken to tell us something about how language is processed, not about linguistic meaning. The only assumption made about the correct semantic theory is that it is true. This is important: there are a plethora of proposed solutions to the liar paradox that a theorist of meaning might hope to make use of in constructing a true semantic theory. The particular difficulty for Borg is that these solutions cannot be read back into the cognitive mechanism that underpins semantic competence.

The point deserves spelling out. First, consider the theorist of meaning. Her aim is, in part, to describe the semantic properties – i.e. the meanings, truth conditions, etc. – of linguistic expressions. That is, it is her aim, in part, to construct correct semantic theories. Correct semantic theories are true: to be a *correct* semantic theory is to be a semantic theory that

[8] I put dialetheism aside for present purposes.

accurately describes the semantic properties that linguistic expressions *in fact* have. So what should the theorist of meaning say about the liar paradox? In short, the answer is easy: the theorist of meaning should ascribe to λ whatever semantic properties λ in fact has (and similarly for other pathological sentences). Of course, the theorist of meaning might not know what semantic properties λ has; but this is not a serious problem. There is a great deal of research into truth and the liar paradox, and one day, so goes the thought, the liar paradox shall be solved. As such, the theorist of meaning may stipulate that she shall simply incorporate the correct solution to the paradox into her semantic theory, whatever that solution turns out to be.

Now, consider the cognitivist, who, recall, says that semantic competence is underpinned by the cognition of a minimal semantic theory. The cognitivist's situation is quite different to that of the theorist of meaning. Whereas the theorist of meaning intends to build a *true* semantic theory, thereby specifying the semantic properties of linguistic expressions, the cognitivist intends to build a semantic theory *that is cognised by speakers*. Must a cognised semantic theory also be true? No. In fact, a cognised semantic theory need not even be consistent. Let me explain why.

Recall that, as I have characterised cognitivism, a speaker cognises a semantic theory just in case her semantic module implements the canonical derivation procedure associated with that semantic theory. Now, an inconsistent semantic theory can have a canonical derivation procedure in precisely the same way as a consistent semantic theory: the procedure, given an input (representation of a) sentence or expression, recursively yields an interpretation for that sentence or expression. For any given line in a particular canonical derivation, the procedure provides a unique next line in the derivation – regardless of the truth or consistency of any preceding lines in the derivation. That one can classically derive anything from a contradiction is irrelevant; only canonically derivable theorems of the semantic theory are relevant to interpretation, and only canonically derivable theorems represent outputs of the semantic module. A minimal semantic theory that yields (T_λ), and is thereby inconsistent, may nonetheless have a perfectly coherent canonical derivation

procedure. Cognition of an inconsistent, minimal semantic theory may consequently underpin semantic competence.

So, unlike the theorist of meaning, the cognitivist does not require a true semantic theory. Rather, the cognitivist requires a semantic theory that is cognised, whose canonical derivation procedure is implemented by speakers' semantic modules. And such a semantic theory could be inconsistent. Given this, it should be clear that there is no motivation for the cognitivist to simply stipulate that the cognised semantic theory reflects the correct solution to the liar paradox, whatever the solution is. Cognitivism is not a view about the semantic properties of expressions, it is a view about the cognitive mechanisms that underpin semantic competence; and there is nothing in the cognitivist view of semantic competence that requires a cognised semantic theory to reflect the correct solution to the liar paradox (or even to be consistent).

It is an empirical question, then, whether the cognised semantic theory is consistent or inconsistent. The liar paradox gives us the principal reason why one might conclude that the cognised semantic theory is inconsistent. For example, Douglas Patterson claims that

> understanding a natural language is sharing with other speakers cognition of a truth conditional semantic theory for that language which the paradoxes show to be logically false. (2009: 413)

The thought is that the best explanation of speakers' linguistic behaviour is that their semantic competence is underpinned by the cognition of a semantic theory that yields (something like) (T_λ) as a truth condition for λ. As Patterson does not explicitly provide any, here is some brief initial evidence that one might marshal in favour of the claim.

First,[9] λ has non-cancellable content, which is captured by (T_λ). Suppose that Sara is teaching a course on the paradoxes and has written just the following on the whiteboard.

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[9] I use linguistic evidence here and in what follows to draw tentative conclusions about the *cognised* semantic theory directly. Perhaps it would be better to assume the meaning hypothesis for the sake of argument, using the linguistic evidence to draw the tentative conclusions about the *correct* semantic theory, and then use the meaning hypothesis to extend the conclusions to the cognised semantic theory. The meaning hypothesis might then be rejected by *reductio ad absurdum*.

The sentence on the whiteboard is not true.

(Note that this is λ, with "λ" replaced by "the sentence on the whiteboard".) Suppose that Sara says that, in her opinion, the sentence on the whiteboard is not true; this results in a student asking whether the sentence on the whiteboard needs to be learnt for the exam. Suppose that Sara responds by uttering (1).

(1) The sentence on the whiteboard is not true.

Plausibly, by uttering (1) in this context, Sara conveys that the sentence need not be learnt for the exam. Suppose now that she continues by uttering one of the following.

(2) … but you still need to learn it for the exam.

(3) … and it's not the case that the sentence on the whiteboard is not true.

Intuitively, Sara would not contradict her utterance of (1) in uttering (2), but she would contradict her utterance of (1) in uttering (3). Thus, there is initial evidence to think that liar sentences (such as λ) have non-cancellable content that is captured by (T_λ) – and consequently that the cognised semantic theory yields (T_λ) and is thus inconsistent.

Second, consider a popular (and consistent) view about the semantics for liar sentences that treats λ as context sensitive.[10] Could such a semantics be captured by the cognised semantic theory? At first glance, the evidence suggests not. For example, suppose that, at *t*, Mike utters the following.

(4) What Mike says at *t* is not true.

[10] See Burge 1979 for one well-known example. See Cappelen and Lepore 2005 and Cappelen and Hawthorne 2009 respectively for recent defences of the tests I employ below. I should note that Borg (2012: 31-32) is critical of using such tests for establishing context sensitivity; failing the tests, however, plausibly remains good evidence for the absence of context sensitivity.

And suppose that, a little later, John utters (5).

(5) What Mike said at *t* was not true.

Then, bypassing any complications involving tense, Mike's utterance of (4) and John's utterance of (5) can clearly be reported correctly (in our context) as follows.

(6) Mike and John said that what Mike said at *t* was not true.

(7) Mike and John agree that what Mike said at *t* was not true.

Given the robustness of the intuition that reports such as (6) and (7) are correct (the reader may test further cases), this is initial evidence that the cognised semantic theory does not treat λ as context sensitive. And, consequently, this is initial (albeit indirect) evidence that the cognised semantic theory is inconsistent.

Third, there is some non-linguistic evidence that speakers cognise inconsistent semantic theories. Consider: if speakers cognise *consistent* semantic theories that ascribe a consistent truth condition to the liar sentence, then it is difficult to understand why theorists have been unable to find and agree upon a solution to the paradox. (Have they not been introspecting hard enough?) Given the lack of an accepted solution to the paradox – after two thousand years of trying – perhaps the best conclusion to draw is that the mechanism that underpins semantic competence somehow encodes a contradiction.[11] For the cognitivist, the natural conclusion is that the cognised semantic theory is inconsistent as it yields (something like) (T_λ).

Let me summarise. Correct semantic theories are true, whereas cognised semantic theories need not be. The problem of paradox states that, in light of the liar paradox, speakers in fact cognise inconsistent semantic theories. If this is indeed the case, then it follows that correct

[11] This line of response to the liar paradox has seen a recent surge in popularity. See e.g. Eklund 2002, Ludwig 2002, Patterson 2009, and Scharp 2013. I briefly mention it again in §5.

semantic theories are not cognised semantic theories: the former are true whereas the latter are not. This directly contradicts the meaning hypothesis, undermining the principal motivation for BM.

There are two broad lines of response to the problem of paradox: first, Borg could argue that the liar paradox does not in fact show that the cognised semantic theory is inconsistent; and, second, Borg could attempt to show that the inconsistency of the cognised semantic theory is not a problem. Let us consider these lines of response in turn.

4. Line of response: deny inconsistency

One might be tempted to defend the principal motivation along the following lines.

> *Deny inconsistency (DI)*: initial evidence notwithstanding, it has not been *established* that speakers cognise inconsistent semantic theories. As such, Borg can supplement her view with the hypothesis that speakers in fact cognise consistent semantic theories. Call this the *consistency hypothesis*. Together, the meaning hypothesis and the consistency hypothesis are explanatorily potent – i.e. they vindicate (E1)-(E3). So they are promising hypotheses, they can be held simultaneously, and thus Borg can retain the principal motivation for BM.

This line of response faces an important difficulty. Let us begin by supposing that the consistency hypothesis holds true: speakers do in fact cognise consistent semantic theories. Roughly, the difficulty facing DI is this: if (E1)-(E3) are good explanations in the actual world, then we expect them to have a certain amount of modal robustness; but there are relevant nearby possible worlds in which nothing like (E1)-(E3) are available; so the explanatory potency of the meaning hypothesis, the meaning hypothesis itself, and thus the principal motivation, are all undermined.

Consider first the following analogy. Suppose that a meta-ethicist defends an hypothesis according to which: in any situation, one is morally required to perform the action that one's parents would desire one to perform, were they present. Suppose also that she uses this hypothesis to

provide substantial explanations about (say) the learnability of morality: agents learn what is morally required of them by taking notice of their parents' desires (or whatever). One might be tempted to raise a problem for this meta-ethicist: it seems that sometimes parents have conflicting desires concerning their child's behaviour. So, while one's moral requirements are (we may assume for the purposes of the analogy) always consistent, the relevant desires of one's parents are apparently sometimes inconsistent. Thus the hypothesis may appear falsified, undermining the meta-ethicist's explanation of the learnability of morality.

Suppose that the meta-ethicist in question responds by supplementing her hypothesis with another: she hypothesises that, in the actual world, parents happen to share their desires concerning their child's actions. The problem is this: it is difficult to see how the meta-ethicist's explanation of the learnability of morality is saved. It could easily have been the case that parents sometimes had conflicting desires concerning their child's actions and, in such circumstances, children would still have learnt morality (so to speak). But it would be absurd to suggest that this phenomenon – the phenomenon of a child (whose parents sometimes have conflicting opinions about their child's behaviour) learning morality – is any different from the phenomenon that our meta-ethicist claims actually obtains – the phenomenon of a child (whose parents happen never to have conflicting opinions about their child's behaviour) learning morality. There is one phenomenon and, by-and-large, it demands the same explanation in both worlds. As the meta-ethicist's explanation is not the right explanation for one, it is not the right explanation for the other.

The same point holds for Borg. Recall that we are currently supposing that speakers actually cognise consistent semantic theories. Under this supposition, and holding cognitivism fixed, it nonetheless could very easily have been the case that speakers had cognised inconsistent semantic theories. There is a nearby possible world in which our linguistic behaviour is just the same, the mechanisms underpinning that behaviour are just the same, but we have been 'neurologically-wired' a little differently, so to speak, such that the cognised semantic theory yields (T_λ), and such that our pragmatic mechanisms are slightly adjusted to compensate for the difference. From Borg's perspective, this is a very nearby possible world that I am describing: same phenomena, same

underlying mechanisms.[12] Yet, from the perspective of DI, the explanations for the learnability of language (E1), non-cancellable content (E2), and the relation between meaning and linguistic data (E3), would consequently have been quite different: the meaning hypothesis would have been false, and so could not have played its alleged central role in the explanations.

To be clear, the point here is not that *all* explanations should hold in *any* nearby world. For example, if we explain the occurrence of a hurricane by citing a particular butterfly's flutter, then, given the nature of chaotic systems, we might not expect our explanation to have any modal robustness at all. But (E1)-(E3) do not appear to be like this. We understand the lack of modal robustness in the butterfly case: arbitrarily small differences to the input of a chaotic system will result, in due course, in radically different outputs. But it is far from clear that anything similar can be said with regard to (E1)-(E3). Taking the learnability of language as a quick example, even if the particular inputs to one's 'language acquisition mechanism' had been subtly different, we would still expect one to have learnt a very similar language – and there is little reason to suppose that different explanations are required for why such similar languages are learnable. To make use of DI, Borg would have to give a clear account of why explanations (E1)-(E3) would not have held, if speakers had cognised inconsistent semantic theories.

Such an account is not easily given, however. Consider two popular views about explanation: explanation is subsumption under a law; and explanation is specification of an underlying mechanism.[13] According to both views, we expect the explanations (E1)-(E3) to have enough modal robustness to cause problems for DI.

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[12] Why are cognition-of-a-consistent-theory and cognition-of-an-inconsistent-theory the same mechanism? Because, *qua* cognitivism, they are the same mechanism: there is nothing in the cognitivist account of semantic competence that distinguishes them. (And it is not legitimate to use concerns about linguistic meaning to inform our individuation of cognitive mechanisms.)

[13] See e.g. Cummins 2000 for a useful discussion of these views in the context of psychological explanation. I suspect that an anti-realist conception of explanation such as van Fraassen's (1980) might help Borg here; however, an anti-realist conception of explanation would not sit naturally with the realist picture Borg paints.

Suppose that we adopt the view that explanation is subsumption under a law. Suppose moreover that we have a particular phenomenon, φ, that we explain by subsumption under a law, Λ. We expect our explanation to display a certain level of modal robustness: in any nearby possible world, *w*, in which Λ is a law and φ occurs, we should likewise explain φ (as it occurs in *w*) by its subsumption under Λ. The question for Borg, then, is this: if speakers had cognised inconsistent semantic theories, would the laws of nature have been the same? Intuitively, the answer is that, yes, the laws of nature would have been the same. Neither the failure of the meaning hypothesis, nor the failure of the consistency hypothesis, constitutes a nomological difference: the meaning and consistency hypotheses are not proposed as candidate linguistic laws, psychological laws, neurological laws, etc. So we expect the same explanations of the learnability of language, non-cancellable content, and the relation between meaning and linguistic data, regardless of the consistency of the cognised semantic theory.

Suppose instead that we adopt the view that explanation is specification of the underlying mechanism. Then we explain a phenomenon, φ, by specifying the mechanisms that underlie occurrences of φ. If speakers had cognised inconsistent semantic theories, would the mechanisms that underlie the speaker's ability to learn language, the non-cancellability of certain content, and the relation between meaning and linguistic data, have been the same? It seems that the answer is that, yes, they would have been the same. Semantic competence would still have been underpinned by cognition of a minimal semantic theory, and there is no reason to suppose that the mechanisms underlying other cognitive capacities, conversational dynamics, the metaphysics of meaning, etc., would have been any different. So, whatever mechanisms actually underlie the speaker's ability to learn language, the non-cancellability of certain content, and the relation between meaning and linguistic data, it is difficult to see why they would have been different if the cognised semantic theory had been inconsistent. So, on the view that explanation is specification of underlying mechanism, we expect the same explanations of the learnability of language, non-cancellable content, and the relation between meaning and linguistic data, regardless of the consistency of the cognised semantic theory.

There are difficulties, then, facing DI. The response – which suggests adding the hypothesis that the cognised semantic theory is consistent – putatively allows one to use (E1)-(E3) in the actual world, but not in nearby possible worlds in which speakers cognise inconsistent semantic theories. But it is unclear both whether there can be, and why there would be, different explanations of the phenomena in those nearby worlds. Borg would have to resolve these issues, if she were to adopt DI.

5. Line of response: deny that inconsistency is a problem

The second line of response is to argue that the inconsistency of the cognised semantic theory does not undermine the principal motivation after all. Assuming now, for ease of exposition, that the cognised semantic theory is in fact *in*consistent, there are at least three strategies available for saving the principal motivation. I shall briefly mention the first two, and then discuss the third in a little more detail.

The first strategy is to accept dialetheism. Borg may accept that, assuming the cognised semantic theory is inconsistent in virtue of its canonically proving ($T\lambda$), then ($T\lambda$) is in fact true. On this option, it follows that *both* λ is true *and* λ is not true; triviality is avoided by commitment to a nonclassical, paraconsistent logic that deems *ex falso quodlibet* invalid. I take the plausibility of this response to the problem of paradox to be tied directly to the plausibility of dialetheism – a matter that has been discussed at length elsewhere.[14] However, let me briefly note that a dialetheist response to the problem of paradox would significantly increase the amount of logical and metaphysical baggage that comes with Borg's view; this would be a difficult concession, I think, for the supporter of the otherwise logically classical and metaphysically parsimonious BM. In what follows, I put the dialetheist strategy aside.

The second strategy is to accept an inconsistency theory – roughly along the lines of those presented in, for example, Eklund 2002, Ludwig 2002, Patterson 2009, and Scharp 2013. On this line of thought, semantic competence is underpinned by a mechanism that, roughly speaking, encodes a contradiction. These views are too many, and too varied, to

[14] See e.g. the papers in Priest, Beall and Armour-Garb 2005.

discuss here. But let me very briefly note some reasons why, *prima facie*, Borg would be unable to adopt any of the just-mentioned views. First, Eklund's view is, by his own admittance (2002: 260), incompatible with truth-conditional semantics. Second, Ludwig's view involves mentioning, without using, a truth-conditional semantic theory; as a result, on Ludwig's view a semantic theory does not explicitly determine truth conditions for any sentences at all. Such a semantic theory is not, it seems, a minimal semantic theory in Borg's sense.[15] Third, Patterson's (2009) view explicitly involves the denial that any sentences of natural language have truth conditions. This is not compatible, however, with BM's commitment to well-formed declarative sentences having truth conditions. And, finally, Scharp's view requires him to explicitly deny (2013: 459f) anything along the lines of the meaning hypothesis. It seems from the outset that Borg is not in the position to adopt any of these views. In what follows, I put inconsistency theories aside.

The third strategy – which I shall discuss in a little more detail – is to adjust the meaning hypothesis.

> *Meaning hypothesis adjustment (MHA)*: the meaning hypothesis says that the cognised semantic theory specifies *exactly* the meaning facts: it is the correct semantic theory for the speaker's language. However, Borg need not be committed to such a strong tie. She may instead offer the adjusted hypothesis that the cognised semantic theory specifies *all-but-not-only* the meaning facts: the correct semantic theory may be a subtheory of the cognised semantic theory.

We can capture the adjusted meaning hypothesis, as suggested by MHA, as follows.

> *The adjusted meaning hypothesis*: the correct semantic theory is a subtheory of the cognised semantic theory.

On this adjusted version of the meaning hypothesis, the cognised semantic theory may overgenerate: it may sometimes attribute semantic properties

[15] See Ludwig 2002, and also Patterson's (2009: 392-401) discussion.

to linguistic expressions that do not in fact possess those semantic properties.

It is useful to see why the correct semantic theory should be a *subtheory* of the cognised semantic theory. The aim of MHA is to adjust the meaning hypothesis – and to adjust it in such a way so as to both imply BM, and to support the explanations (E1)-(E3). However, if the correct semantic theory is not a subtheory of the cognised semantic theory, then it follows that there are meaning facts that are not captured by the cognised semantic theory: but, then, there is no guarantee that language is learnable (E1), there is no reason given why linguistic meaning would be non-cancellable content (E2), and the clear route to the construction and confirmation of semantic theories would be lost (E3).

MHA shows promise. It parallels a popular view in the literature on the liar paradox: that we should adopt a broadly Kripkean approach to truth.[16] The approach involves giving a recursive definition of truth for a language whose pathological sentences (such as liar sentences) are deemed not to have truth conditions; there have been numerous suggestions as to how to pick out the pathological (or, better: ungrounded) sentences in question. By aligning MHA to this broadly Kripkean approach to truth, one might hope to provide an attractive response to the problem of paradox.

However, there are difficulties facing any attempt to follow MHA: it is not clear that the adjusted meaning hypothesis supports explanations (E1)-(E3). To begin, consider what MHA says about sentence (1) as it is uttered by Sara.

(1) The sentence on the whiteboard is not true.

Recall that Sara utters (1) in a context, call it "C", in which (1) is the only sentence on the whiteboard and is thus a liar sentence. In C, then, MHA shall deem (1) to lack any truth-conditional content. Let me now raise difficulties involved in maintaining (E1)-(E3).

First, (E1). It is desirable to maintain that, even in C, the subsentential constituents of (1) are meaningful; but then, as (1) lacks truth-conditional

[16] Kripke's theory of truth is first introduced in his 1975. See Leitgeb 2005 for a more recent version of the approach.

content in C, it is natural to conclude that the meanings of the constituents of (1), with their mode of combination, do not suffice to determine a truth-conditional content for (1). But then, it seems, such truth-conditional content is not obtained through composition. If this is right, then it is unclear both whether Borg can maintain that truth-conditional content is learnable, and exactly what (if any) kind of content is obtained through composition.

Second, (E2). We saw earlier that, in C, (1) has a non-cancellable level of content. Sara cannot follow her utterance of (1) by uttering

(3) … and it's not the case that the sentence on the whiteboard is not true.

without self-contradiction. Note, though, that for "*p* and not-*p*" to be a contradiction, "*p*" must have truth-conditional content. (Otherwise, there is no conflicting representational content expressed by "*p*" and "not-*p*".) But, on MHA, (1) lacks truth-conditional content in C: so it is unclear how an utterance of (3), or indeed any other sentence, can contradict it. So it is unclear that Borg can make use of the adjusted meaning hypothesis to provide a non-cancellable level of content.

Third, (E3). Given MHA, it seems that there are normal, or *grounded*, sentences and there are pathological, or *ungrounded*, sentences. As the grounded/ungrounded distinction divides sentences into those that have truth conditions and those that do not, it is natural to think that *groundedness* and *ungroundedness* are semantic properties. But the distinction is *not* represented in the *cognised* semantic theory. On MHA, we (theorists) are using the distinction to divide the canonical theorems of the cognised semantic theory into those that are, and those that are not, yielded by the *correct* semantic theory; if the distinction were represented in the cognised semantic theory, we would not need to do this. It thus appears that there are semantic facts that are *not* mirrored in the cognised semantic theory. But then it is unclear both what grounds those facts, and what data we are using ascertain them.

There are, then, difficulties facing MHA: it appears that the adjusted meaning hypothesis does not support (E1)-(E3). As a result, it is unclear whether, on MHA, the principle motivation can be saved.

6. A challenge

BM might not *require* the principal motivation; but it is certainly a much less attractive position without it. Coherence with cognitivism is a key advantage: it allows Borg to naturally explain the learnability of language, non-cancellable content, and to give a fruitful, principled account of how to construct and confirm a semantic theory. Borg would do well to keep these advantages.

The challenge, then, is this: to find a construal of the meaning hypothesis that is explanatorily potent – both in this world and in the relevant nearby possibly worlds – and that implies BM. This is the challenge that must be met if the problem of paradox is to be resolved.[17]

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