

**Scott Soames**  
**The Possibility of Partial Definition**

The view of vagueness I favor is one according to which vague predicates are partially defined, in the sense of being governed by rules that provide sufficient conditions for them to apply, and sufficient conditions for them not to apply, but no conditions that are both individually sufficient and disjunctively necessary for them to apply, or not to apply, to an object. Objects for which such a predicate *P* is undefined are those for which neither the claim that *P* applies to them, nor the claim that it doesn't, is sanctioned. For any name *n*, which we know to refer to *o*, we accept the claim that *P* applies to *o* just in case we accept [*Pn*], which we accept just in case we accept the claim that [*Pn*] is true. When *P* is undefined for *o*, these sentences and claims are also undefined. Since even complete knowledge of all linguistic and non-linguistic facts wouldn't justify accepting or believing them, such acceptance or belief is always mistaken.

The *extension* of *P* is the collection of things to which *P* applies; the *antiextension* is the collection to which *P* doesn't apply. The *determinate extension* of *P* is the set of objects *o*, such that claim that *P* applies to *o* is a necessary consequence of the rules of the language plus all relevant underlying non-linguistic facts. For some objects *o* the claim that *o* is *not* in the determinate-extension of *P* is true, whereas the claim that *o* is not in the extension of *P* is undefined. Similar remarks apply to the antiextension and *determinate-antiextension* of *P*. Corresponding to these distinctions, there is also a distinction between truth and *determinate truth*.

In addition to being partially defined, vague predicates are context sensitive. Given such a predicate *P*, one begins with its (*default*) *determinate-extension* and (*default*) *determinate-antiextension* of *P*. *P* is undefined for *o* just in case *o* is in neither of these sets. Since the sets don't exhaust all cases, speakers have the discretion of adjusting the extension and antiextension to include initially undefined cases. When one does this by predicating *P* of *o*, or by denying such a predication, and one's hearers go along, the extension (or antiextension) of *P* is contextually adjusted to include *o*, plus all objects that bear a certain relation of similarity to it.

Observation predicates like ‘is blue’ -- which we learn by example rather than definition -- are good illustrations. When learning the word, we note that certain objects are uniformly called ‘blue’, while certain others are uniformly called ‘not blue’. People say of *o* -- which we note to be of a certain shade BE1 -- “That’s blue,” while saying of *o*\* -- which we observe to be of shade BA1 -- “That’s not blue.” On this basis, we come to accept the rule Blue 1.

#### Blue 1

If *o* is BE1, then ‘is blue’ applies to *o*

If *o* is BA1, then ‘is blue’ does not apply to *o*

Further experience leads us to accept additional rules involving different shades, until, at some point, we are counted as understanding the predicate. At this point, our rules provide a rich set of sufficient conditions for application, plus a similar set for nonapplication. However, the requirement that the rules be adhered to by the great majority of speakers ensures that these conditions won’t be jointly exhaustive. Since there are shades of color, and objects having them, about which the rules say nothing, the predicate is partially defined.

Context sensitivity means that we are free to adjust the extension or antiextension of the predicate to include objects for which it is undefined by the rules of the language. Suppose I call such an object *o* ‘blue’, and my hearers go along. Then, the extension of ‘is blue’ is contextually expanded to include *o*, plus others discriminately bluer than, or perceptually indiscriminable in color from, *o*. Let BE<sub>c</sub> be a shade that applies to precisely this class. The rule -- *If an object is BE<sub>c</sub>, then ‘is blue’ applies to it* -- is thereby implicitly adopted in the conversation. Although not a rule of the language governing the predicate, it is one that speakers may adopt in particular contexts.

The basic rule of the language governing the predicate (by providing its default determinate extension and antiextension) is Blue-English, where BE and BA are families of shades uniformly characterized as *blue*, and *not blue*, respectively (leaving a gap).

#### Blue-English

If *o* exemplifies one of the shades in BE, then ‘is blue’ applies to *o*

If *o* exemplifies one of the shades in BA, then ‘is blue’ does not apply to *o*

What are these shades, and how do they become associated with the word ‘blue’? Colors are natural kinds, and color shades are surface reflectance properties of objects. Their association with ‘blue’ is

illustrated by a simplifying idealization. Imagine a small, homogenous community introducing the word into their language. They notice a set  $BE_o$  of perceptually similar objects (of varying shades within BE) which are easily discriminable from another set  $BA_o$  of objects (of varying shades within BA). They introduce the word ‘blue’ with a reference-fixing stipulation.

Intro. ‘Blue’ is to designate the property of object surfaces causally responsible for the fact that (nearly) all members of  $BE_o$  appear similar to one another, and different from  $BA_o$ . Hence, ‘is blue’ will apply (at any world-state) to all and only those objects the surfaces of which have the property which (in the actual world-state) causally explains why members of  $BE_o$  look similar to us, and different from members of  $BA_o$ .

This stipulation is, of course, a fantasy. The term ‘blue’ could have been introduced in this way, and it behaves pretty much as if it had been so introduced. However, no such stipulation need ever have occurred. It is enough if speakers simply started calling things ‘blue’, with the intention that the predicate was to apply, not only to certain objects they had encountered, but also to those sharing the property of surfaces that explained their appearance.

Finally, it must be remembered that in discussing the idealized stipulation, as well as the more realistic process of introduction it summarizes, we are *not* talking about a *semantic* rule of the language, mastered by speakers, stating the meaning or reference of a term. Although the stipulation mentions particular objects involved in the introduction of ‘blue’, it is not a semantic rule of English that this, that, or the other object is blue. Instead, the stipulation summarizes a crucial element in the explanation of how the word ‘blue’ *acquired* the semantic properties it has – among them, the property of being partially defined.<sup>1</sup>

### **The Alleged Impossibility of Partial Definition**

---

<sup>1</sup> This sketch of vague predicates, including color terms, summaries of more detailed discussions in: chapter 7 of *Understanding Truth*, (New York: Oxford University Press), 1999; “Higher-Order Vagueness for Partially Defined Predicates,” in JC Beall, ed., *Liars and Heaps* (Oxford: Clarendon Press), 2003; and “Knowledge of Manifest Natural Kinds,” *Facta Philosophica*, 6, 2004, 159-181.

That, in brief, is the account of vague predicates I favor. I now turn to an objection that seeks to establish, not just that the account is wrong, but that it is incoherent. According to the objection, made by Michael Glanzberg, there aren't, and couldn't have been, partially defined predicates in any language.<sup>2</sup> His main argument, which is presented as an elaboration one given earlier by Michael Dummett, is based on global claims about assertion.<sup>3</sup> It is supposed to show that there can be no truth-value gaps -- all propositions must be either true or false.

Glanzberg states the argument as follows:

- (i) Speech acts, including assertions, are moves within a practice of using language which is (partially) rule-governed ... As such, speech acts have *intrinsic purposes* [norms].
- (ii) The intrinsic purpose [norm] of assertion is to convey the information that something is the case, i.e. to assert [s] is to convey the information *that s*.<sup>4</sup>
- (iii) Combining (ii) with the idea that propositional contents encapsulate truth conditions implies a form of the 'truth-assertion platitude', for the intrinsic purpose [norm] of assertion: the intrinsic purpose [norm] of assertion is to assert that truth conditions obtain.
- (iv) The truth of a claim is thus fundamentally a matter of a purpose act achieving its intrinsic purpose [conforming to its intrinsic norm].<sup>5</sup>

Elaborating on this conclusion, Glanzberg says:

Assessing for truth is a matter of assessing a purposive act for success. We may thus think of truth itself as having a point or purpose, in so far as *it is correctly applied exactly when a purposive act achieves its purpose*. The same may be said for truth values... Any assignment of truth value amounts to an assessment of whether a purposive act has achieved its purpose. [my emphasis]

---

<sup>2</sup> "Against Truth Value Gaps," in *Liars and Heaps*.

<sup>3</sup> Michael Dummett, "Truth," *Proceedings of the Aristotelian Society*, 59, 1959, 141-162.

<sup>4</sup> Glanzberg's use of metalinguistic variables and corner quotes requires correction. The final clause of (ii) should be understood: *i.e. to assert (the proposition expressed by) s is to convey the information (proposition) denoted by [that s]*.

<sup>5</sup> p. 159.

*[T]he value true corresponds to the intrinsic purpose of an assertion being achieved, and false corresponds to it failing to have been achieved. It appears evident that these are the only ways that an assertion can be assessed for whether it has achieved its intrinsic purpose. It either has or has not done so.*<sup>6</sup> [my emphasis]

This points to the following conception of the intrinsic purpose, or norm, of assertion.

The Glanzberg-Dummett Account of the Norm of Assertion

(GD1) For any proposition  $p$ , an assertion of  $p$  is correct (satisfies the intrinsic norm of assertion) just in case  $p$  is true. (GD2) An assertion is incorrect (fails to satisfy the intrinsic norm governing assertion) just in case  $p$  is false (not true).

The import of this conclusion for theories of truth-value gaps, and/or partial definition, is easy to see. Any theory that maintains both that some propositions are neither true nor false, and that the assertion of such a proposition is incorrect because it violates the norm of assertion, is incompatible with (GD2). Thus, establishing (GD2) would be sufficient to refute any such theory. It would also be sufficient to refute theories that embrace partial definition, in my sense. On the one hand, these theories insist that asserting an undefined proposition violates the norm of assertion, and so is incorrect. On the other hand, in calling the proposition undefined, the proponent of partial definition is committed to rejecting the claim that it is untrue – thereby violating (GD2). Thus, accepting (GD2) requires rejecting partial definition. Moreover, the friend of partial definition – who doesn't assert the existence of propositions that are neither true nor false, doesn't object to identifying falsity with untruth, and is happy with contraposition (in the sense of accepting *If  $\sim B$ , then  $\sim A$*  whenever he accepts *If  $A$ , then  $B$* ) – recognizes that (GD1) entails (GD2). Thus, (GD1) is incompatible with partial definition.

But how, exactly, is (GD1) supposed to follow from the premises of Glanzberg's argument? Premise (ii) tells us that the aim of asserting the proposition  $p$  expressed by a sentence  $S$  is to convey that which  $S$  expresses, namely  $p$ . But the claim that conveying  $p$  is the aim of asserting  $p$  doesn't advance the argument. Nor does premise (iii), which says, in effect, that the aim of asserting  $p$  is to assert that the truth conditions of  $p$  "obtain." Since for conditions to "obtain" is just for

---

<sup>6</sup> The first passage is from p. 159, the second from 165-6.

them to be satisfied, this amounts to the claim that the aim of asserting *p* is to assert that *p* is true – which is, at best, parasitic on the triviality that the aim of asserting *p* is to assert *p*. The problem reappears in a further remark Glanzberg makes.

The intrinsic purpose of assertion is to *say* that the truth conditions expressed obtain.

This purpose is *achieved* just when the proposition expressed is true.<sup>7</sup> [my emphasis]

But this is a non-sequitur. If my purpose is simply to *say* that the truth conditions of *p* obtain, and hence to commit myself to the claim that *p* is true, I can easily achieve that purpose even if *p* is false, or undefined. After all, it is perfectly possible to *say* of any proposition that it is true. Thus, Glanzberg has no argument for (iv), which is supposed to abbreviate (GD1).

However, this needn't be fatal, since (GD1) and (GD2), which can be broken into pairs of quantified conditionals, have some independent plausibility.<sup>8</sup>

(GD1a) For any proposition *p*, and assertion *A(p)* of *p*, if *A(p)* is correct (satisfies the intrinsic norm of assertion), then *p* is true.

(GD1b) For any proposition *p*, and assertion *A(p)* of *p*, if *p* is true, then *A(p)* is correct (satisfies the norm).

(GD2a) For any proposition *p*, and assertion *A(p)* of *p*, if *p* isn't true, then *A(p)* is incorrect (doesn't satisfy the norm).

(GD2b) For any proposition *p*, and assertion *A(p)* of *p*, if *A(p)* is incorrect (doesn't satisfy the norm), then *p* isn't true.

(GD1a) and its contraposited version, (GD2a), are unproblematic. Since the assertion of an undefined proposition *p* violates the norm of assertion, instances of these principles corresponding to *p* will be true -- by falsity of antecedent in the case of (GD1a), and by truth of the consequent, in the case of (GD2a). Thus, it is only (GD1b) and (GD2b) that are potentially problematic for partial definition. However, these principles are incorrect.

---

<sup>7</sup> P. 164.

<sup>8</sup> In discussing these issues I take "correct" and "incorrect" to be mutually exhaustive (when applied to assertion). Although this is an idealization, it doesn't affect the issues at hand.

In the presence of the (a) principles, what the (b) principles tell us is that all there is to the intrinsic norm of assertion is the directive to assert truths. But, as Timothy Williamson has argued, this is implausible.<sup>9</sup> Assertion isn't the only speech act that aims at truth. That other truth-directed acts – like conjecturing or predicting – put less stringent demands on the agent than does assertion suggests that there is more to assertion than aiming at truth. This is born out by cases -- e.g. those involving lotteries -- in which we aren't warranted in asserting certain truths, even though they are highly probable on our evidence. In these cases one believes, but fails to know, some true proposition p, even though the odds in favor of p are very heavy. The fact that one isn't warranted in asserting p, despite reasonably believing p to be true, suggests that assertion requires what is missing in these cases – knowledge. As Williamson notes, this explains why the question “How do you know?” is a standard way of challenging an assertion. The question presupposes that an agent who has asserted p should know p – which is just what one would expect if knowledge, rather than truth, was the norm of assertion.

These and related considerations support replacing the Glanzberg-Dummett truth-based norm with the Williamsonian knowledge-based norm.

Williamson's Account of the Norm of Assertion

(W1) For any proposition p, an assertion of p is correct (satisfies the norm of assertion) just in case the agent knows p. (W2) An assertion of p is incorrect (fails to satisfy the norm) just in case the agent doesn't know p.

As before, we can divide each of these claims into a pair of claims.

- (W1a) For any proposition p, and assertion A(p) of p, if A(p) is correct (satisfies the norm of assertion), then the agent knows p.
- (W1b) For any proposition p, and assertion A(p) of p, if the agent knows p, then A(p) is correct (satisfies the norm).
- (W2a) For any proposition p, and assertion A(p) of p, if the agent doesn't know p, then A(p) is incorrect (doesn't satisfy the norm).
- (W2b) For any proposition p, and assertion A(p) of p, if A(p) is incorrect (satisfies the norm), then the agent doesn't know p.

---

<sup>9</sup> “Knowing and Asserting,” *Philosophical Review* 105, 4, 1996, 489-523.

Glanzberg's principles (GD1a) / (GD2a) – which, as we have seen, are unproblematic for theories of partial definition and undefined propositions -- are entailed by (W1a) / (W2a), and so have the status of derived norms of assertion. Since (GD1b) / (GD2b) conflict with (W1a) / (W2a), they must be rejected. What remains of his argument against partial definition is, therefore, reducible to the question of whether accepting partial definition is compatible with accepting (W1) / (W2).

Since these two principles are interderivable, we may concentrate on (W2). Can I admit that the assertion of an undefined proposition is incorrect because it can't be known, without attributing its unknowability to it's not being true. I should think so. From the beginning, I have said that it is a mistake to *assert* an undefined proposition *p* because even complete knowledge of linguistic and nonlinguistic facts wouldn't justify *accepting* *p*, as opposed to its negation. If this point can be extended to an explanation of why one can't *know* *p*, then partial definition and undefined propositions will have been rendered compatible with the correct account of the norm of assertion -- and the Glanzberg-Dummett argument will have been rebutted.

### **The Unknowability of the Undefined**

Why, then, can't one know the undefined? Since the Glanzberg-Dummett argument purports to rule out very possibility of a language containing partially defined predicates, I will frame my rebuttal around a simple, artificial example, which parallels, for color words, an example I have used in other contexts.<sup>10</sup> Imagine members of a small linguistic community living on a desert island, cut off from the outside world. Sharing no antecedent common language, they set about to create one. Color words are introduced by authoritative stipulation. One of these, '*bluege*', is introduced by applying it to examples. As it happens, the island contains objects of various shades of blue each of which is stipulated to be *bluege*, and various shades of green and other colors, which are stipulated not to be *bluege*.<sup>11</sup> However, a few shades remain unclassified, because they aren't exemplified on the island.

---

<sup>10</sup> I refer to the smidget example (the idea for which was originally suggested to me by Nathan Salmon) discussed in chapter 6 of *Understanding Truth*.

<sup>11</sup> We may imagine that the comparative, '*blueger than*', is similarly introduced.



Among them are shades intermediate between the least blue of those stipulated to be *bluege* and the most blue-like of the greens stipulated not to be *bluege*. Since there is no pressing need to decide the status of these shades, the gap goes unremarked. At this point, speakers agree that their language contains a meaningful term '*bluege*', governed by the authoritative, meaning-giving stipulations summarized in Bluege-Island. (BIE is the family of exemplified blue shades on the island; BIA is a family of exemplified nonblue shades.)

#### Bluege-Island

If o exemplifies one of the shades in BIE, then '*bluege*' applies to o

If o exemplifies one of the shades in BIA, then '*bluege*' does not apply to o

Is '*bluege*' partially defined? Consider a shade, INT, intermediate between blue and green. A sequence of four barely discriminable shades separates INT from the least blue shade in BIE, and a similar sequence separates it from the most blue-like shade of green in BIA. Does '*bluege*' apply to objects exemplifying INT? The stipulations don't tell us. Objects exemplifying INT haven't been stipulated to be *bluege*, or not to be. Since they are as perceptually similar to those stipulated to be *bluege* as they are to those stipulated not to be *bluege*, the case for classifying them one way is no better than the case for classifying them the other. The issue isn't how to extend the meaning of '*bluege*'. That's a future matter for the Islanders to consider. Rather, the issue is whether '*bluege*' already applies, or doesn't apply, to objects exemplifying INT. Since there is no more support for one of these alternatives than for the other, the facts don't determine either one. Hence '*bluege*' is undefined for objects exemplifying INT, and complete knowledge of all relevant facts would neither justify taking '*bluege*' to apply to them, nor justify taking it not to apply to them.

This explains why someone omniscient about all the relevant facts wouldn't know any proposition p predicating '*bluege*' of an object for which it was undefined.<sup>12</sup> That explanation

---

<sup>12</sup> Here and throughout I adopt the simplifying assumption that, for all the cases under discussion, an agent who understands a sentence S that expresses a proposition p (in a context C) will accept/believe-true (be justified in

doesn't say that  $p$  isn't true. It says that knowing  $p$  isn't possible because the agent lacks the justification needed for knowledge. In general, an agent whose justification for a proposition is no better than his justification for its negation won't know that proposition, even if he believes it. But if agents who know all the '*bluege*'-relevant facts lack the justification required for knowledge of  $p$ , the same will be true of ordinary, non-omniscient agents, who know less. To be sure, the acquisition of additional information bearing on a hypothesis  $q$  sometimes puts an agent with partial information about  $q$  in a worse position to know it – as when coming to know a true, but misleading, defeater undermines one's initial knowledge of  $q$ . In all such cases, however, further knowledge, defeating the defeater, reinstates one's original knowledge. Although selective bits of additional knowledge sometimes put one in a worse position to know something, knowing all the relevant facts never does. Thus, if the non-omniscient could know  $p$ , the relevantly omniscient could too. But since the omniscient can't, no one else can either. .

Appreciating this point requires distinguishing justification, in the sense that it is needed for knowledge, from mere reasonableness of belief. Undefined propositions can be highly probable on one's evidence, making it perfectly reasonable to believe them. However, this doesn't provide the justification needed for knowledge. As lottery examples have taught us, even when the probability of a proposition on one's evidence is arbitrarily high, one may fail to know it -- because one's evidence isn't of the right sort. This point, which holds for true propositions, doesn't cease to hold for the undefined. When justification is understood as the cognitive requirement needed for knowledge, believing the undefined is unjustified, no matter how reasonable it is in certain cases.

This completes my rebuttal of the Glanzberg-Dummett argument that the intrinsic norm of assertion rules out partial definition. The first step was to replace their inadequate conception of this norm with a better one -- according to which what assertion requires is knowledge of the proposition asserted. The second step was to explain why undefined propositions can't be known in a way that

---

accepting/believing-true)  $S$  (in  $C$ ) iff the agent believes (is justified in believing)  $p$ . Although Kripkean Pierre-type cases show that this principle needs modification, the complications don't affect the issues raised here.

doesn't commit one to their not being true. Combining both, we have an account of why asserting an undefined proposition violates the norm of assertion, and so is a mistake.

### Partial Definition and the Excluded Middle

Rebutting the objection doesn't, of course, establish that partial definition really is possible. It does, however, justify giving that possibility some weight. Absent compelling arguments to the contrary, we are, I think, *prima facie* justified in taking the possible term 'bluege' to be partially defined. What about the "law" of the excluded middle? It is often thought that acceptance of partial definition brings with it rejection of some of instances the "law" – on the grounds that a disjunction is undefined when both disjuncts are. While plausible, this point is less obvious than it first seems. When S is undefined, the rules governing S, plus the totality of facts relevant to evaluating S, don't determine that S is true, or that it isn't. As a result, one can't know that S is true, and asserting that it is a mistake. Similar points hold for the proposition expressed by S. But when S is a disjunction [ $\Phi$  or  $\Psi$ ], how do we show that S is undefined in this sense if  $\Phi$  and  $\Psi$  are? It does not, in general, follow from the fact that asserting each of two propositions is a mistake that asserting their disjunction is. Nor does it follow that one who fails to know each of two propositions also fails to know their disjunction. What about determination of truth by the totality of linguistic and nonlinguistic facts? Does the claim that the truth of a disjunction is not a necessary consequence of those facts follow from the claim that the truth of neither disjunct is? That depends on what counts as a necessary consequence of what -- which in turn depends in part on whether [ $\Phi$  or  $\sim\Phi$ ] is itself necessary. Since this is an instance of the very question we are trying to decide, we must be careful not to presuppose the answer we are trying to justify.

How, then, might one combine partial definition with unqualified acceptance of excluded middle? One scheme for doing so is supervaluationism. One starts with an intended model M that assigns interpretations in which some sentences are true, some are false, and some are neither. A sentence S is counted as true *simpliciter* iff S is true in every admissible bivalent extension of M. S is false *simpliciter* iff S is false in all such extensions. Otherwise S is neither true nor false. Since [ $S$  or  $\sim S$ ] is true in all bivalent extensions, the "law" of the excluded middle is preserved, even

when both disjuncts are neither true nor false. Nevertheless, classical supervaluationism doesn't reconcile acceptance of excluded middle with the kind of partial definition given here. For the classical supervaluationist, the claim that  $S$  isn't true follows from the claim that  $S$  is undefined. For me, it doesn't; rather, the claim that  $S$  isn't true is undefined when  $S$  is.

This mismatch could, in principle, be repaired. Instead of holding that  $S$  is true *iff*  $S$  is true in all admissible bivalent extensions of the initial partial model  $M$ , and false *iff*  $S$  is false in all such extensions, one might stipulate that  *$S$  is true, if  $S$  is true in all admissible bivalent extensions of  $M$* , and that  *$S$  is not true, if  $S$  is false in all such extensions*. Since these stipulations give sufficient conditions for being true, and sufficient conditions for not being true, while saying nothing about sentences with different truth values in different classical extensions, such sentences will be undefined in my sense. The resulting system preserves excluded middle, while allowing a form of partial definition that allows one to assimilate sentences and propositions that are not true to those that are false. However, it is still not what we want. In either the classical or the revised form, supervaluationism violates the truism *that  $[\Phi \text{ or } \Psi]$  is true just in case  $\Phi$  is true or  $\Psi$  is true*, and hence *that a disjunction can't be true unless one of its disjuncts is*. Since this truism is essential to our ordinary understanding of 'or' and 'true', supervaluationism doesn't give the right account of the truth conditions of complex sentences of natural language.

It is also explanatorily baroque. In order to determine whether  $S$  is true or not, supervaluationism requires one to first determine whether  $S$  is true in all admissible bivalent models, false in them all, or true in some and false in others. This presupposes a notion of *truth in a model* antecedent to the official supervaluationist notion of truth, plus an antecedent logic used to calculate which sentences are true in which models. The idea that there is both a hidden truth and a hidden logic -- conceptually prior to the ordinary notion of truth we apply in language, and the logic we employ when using it -- is implausible, as well explanatorily tendentious. Since the (classical) laws of the hidden logic are simply taken for granted, it is hard to see how supervaluationism can be used to explain or justify them.

The ineffectiveness of supervaluationism as a semantics doesn't preclude limited supervaluationist reasoning from resolving certain kinds of indeterminacy. Suppose it is determinate that an agent asserts some proposition, but indeterminate which of  $p_1$  to  $p_n$  is asserted.<sup>13</sup> Although *what is asserted* is indeterminate, supervaluationist reasoning might still be used to explain how it is determinate that the speaker said something true, or something untrue -- provided  $p_1$  to  $p_n$  are all true, or all untrue. However, this isn't the kind of indeterminacy to which partially defined predicates give rise. Suppose a speaker says of  $o$  "That's *bluege*," when in fact  $o$  exemplifies the shade, INT, indeterminate between blue and green. There is no indeterminacy about *what is asserted* in this case. It is not as if there is a family of totally defined properties  $B_1 \dots B_n$  such that it is determinate that the agent asserted the proposition that  $o$  has one of these properties, but indeterminate which. Rather, the asserted proposition predicates the partially defined property *being bluege* of  $o$ . The reason it is indeterminate whether what is said is true, is that the truth value of this proposition -- which was determinately asserted -- is indeterminate. Supervaluationism doesn't fit this kind of case.

This leaves us back where we started -- trying to decide whether partial definition requires rejecting some instances of excluded middle. We have seen that supervaluationism does *not* show that partial definition can be combined with unqualified acceptance of the law. But, I haven't yet argued that the two can't be combined. Can a disjunction be determinately true, even if its disjuncts are undefined? Can the claim that  $[\Phi \text{ or } \Psi]$  is true be a necessary consequence of the rules of the language, plus the underlying nonlinguistic facts, even though neither the claim that  $\Phi$  is true, nor the claim that  $\Psi$  is true, is?

When  $\Phi$  and  $\Psi$  are unrelated, it's hard to see how the rules of the language, which are silent about both, could be definitive about the disjunction. How about when one disjunct is the negation of the other? Is there something about this case that gives it a special status, rendering the attribution of truth to (1) a necessary consequence of the rules of the language, plus the underlying facts, even though the same can't be said for the disjuncts, (2a) and (2b)?

---

<sup>13</sup> See pp. 81-83, 337-338 of *Beyond Rigidity* (New York: Oxford University Press), 2002 for potential examples.

1. N is *bluege* or N is not *bluege*.
- 2a. N is *bluege*.
- b. N is not *bluege*.

It is difficult to see what it might be. Suppose we did take (1) to be true. Surely, we would have to say the same about (3) and (4), where ‘N\*’ names the same object as ‘N’, and ‘M’ names a qualitative duplicate of that object (both exemplifying INT).

3. N is *bluege* or N\* is not *bluege*
4. N is *bluege* or M is not *bluege*

Intuitively (1), (3), and (4) should be treated similarly -- all true, or all undefined. However, we have no explanation of how to get the result that the truth the latter is a necessary consequence of the rules of the language plus the underlying facts.

Appealing to (5) won’t help.

5. It is a necessary consequence of the rules of the language, plus the underlying facts, that [N is *bluege*], [N\* is *bluege*] and [M is *bluege*] are all true, all untrue, or all undefined.

To guarantee that (3) and (4) are (determinately) true, if (1) is, we need something like (6).

6. It is a necessary consequence of the rules of the language, plus the underlying facts, that substitution of [M is *bluege*] or [N\* is *bluege*] for [N is *bluege*] in any true disjunction always preserves truth.

Though (6) is quite reasonable, the rationale for it makes it difficult to assign truth to (1). The reason we find (6) plausible is, I think, that we find two ideas compelling:

- R1. The status of a disjunction is entirely dependent on the status of its disjuncts.
- R2. We have as much reason for taking [N\* is *bluege*] and [M is *bluege*] to be true as we have for taking [N is *bluege*] to be true.

But if R2 is compelling, so is R3 – which, in the presence of R1, leads to (7).

- R3. We have as much reason for taking [N is not *bluege*] to be true as we have for taking [N is *bluege*] to be true.
7. It is a necessary consequence of the rules of the language, plus the underlying facts, that substitution of [N is not *bluege*] for [N is *bluege*] (or vice versa) in any true disjunction always preserves truth.

Although (7) is, I think, as well motivated as (6), it clearly precludes taking (1) to be true.

The lesson to take from this is that accepting partial definition and undefined propositions, while trying to retain a completely unrestricted version of excluded middle, is a dubious business. Although it is formally possible to combine the two, the resulting systems seem ill motivated. I therefore conclude that our *prima facie* justification for taking partial definition to be possible provides *prima facie* justification for rejecting the unrestricted excluded middle. We aren't, of course, justified in accepting the negations of any of its instances. That would be incoherent. Rather, we have reason to believe that some of those instances are undefined – in the sense that asserting them would be a mistake, that knowing them is impossible, and that their truth is not determined by the totality of linguistic and nonlinguistic facts.

I haven't argued that partial definition or undefined sentences exist in English. However, I have tried to make such analyses more plausible by addressing the familiar objection that they impose “the high price of giving up classical logic.” Of course, this talk of price is metaphorical. The issue is descriptive, not volitional. We aren't *deciding* how to reason, and looking for the most economical way of doing so. The issue is whether unrestricted versions of all classical “laws” are true. The idea that a theory pays a high price for refusing to agree that they are is just the idea that the “laws” *seem*, initially, to be so. Thus, a theory that doesn't embrace them in full generality has some explaining to do. I have tried to provide the beginning of such an explanation. Later, I will say a word about what the explanation has to say about seemingly more obvious “laws” like  $[\sim(\Phi \text{ and } \sim\Phi)]$

### **Partial Definition, Context Sensitivity and Ignorance**

The view I favor is one in which vague predicates in natural language are both partially defined and context sensitive. In order to more closely approximate the natural language case, let's add context-sensitivity to the rules governing ‘*bluege*’. The imagined situation is as before, with ‘*bluege*’ being introduced by authoritative stipulation, accepted by everyone in the community. The result is a partially defined predicate the meaning of which is stable, due in part to the fact that there are few, if any, objects for which it is undefined among those standardly talked about. At some point, the introduction of such objects changes the situation. Some speakers notice the new shades, and when speaking about them use expressions like ‘*bluegish*’, ‘*kind of bluege*’, and ‘*more bluege than*

*greenge*'. Both the shades previously called "*bluege*," and those called "*not bluege*," continue to be uniformly so characterized. But, there is contextual variation in how shades in the intermediate range are described, and sometimes speakers find themselves at loss for words.

Responding to this need, speakers start allowing themselves the freedom to apply '*bluege*' to objects for which it had initially been undefined. There is, unsurprisingly, variation in how this is done. In some contexts – depending on the audience, subject, and time -- speakers are more expansive in what they are willing to call '*bluege*' than they are in others. However, no one worries about this. No one thinks that there is just one right way to apply the word to objects within its initially undefined range. Instead, it is recognized to be a matter of decision -- with different reasons yielding different results in different cases. Nor is there any sense that the standards adopted in a given context must settle, for each possible shade of color, whether objects of that shade are to be in the extension of '*bluege*' or not. It is enough if the adopted standard allows determinate evaluation of all conversationally relevant propositions. If the predicate does remain undefined for some objects, agents presented with such an object, and pressed to classify it, will often be indifferent – and say things like "*Its sort of bluege and sort of not*," or "*You really can't say that its one or the other*," or "*It doesn't matter, call it what you like*."

At this stage, '*bluege*' is both partially defined and context sensitive. The *determinate extension* and *antiextension* of the original term have become the *default determinate-extension* and *default determinate-antiextension* of the new context-sensitive term. It's meaning is a function from contexts of utterance to members of a restricted family of properties (many of which are partially defined). One member of the family – the default semantic content of '*bluege*' – is a partially defined property that applies to all members of the default determinate-extension, fails to apply to all members of the default determinate-antiextension, and is undefined for everything else. This property plays two roles. First, it is the semantic content of the term unless something about the context selects a different property. Second, it fixes the boundaries of allowable contextual variation in the use of '*bluege*'. Each object it (determinately) applies to is one that every contextually possible semantic content of the term (determinately) applies to, and each object it (determinately) doesn't apply to is



one to which no such content (determinately) applies. Properties in the family of possible semantic contents of '*bluege*' differ only in how they divide up the objects for which the default content of '*bluege*' is undefined.

Of course, not every way of dividing up those objects corresponds to a property in the family. For every such property P and object o, if P (determinately) applies to o, then P (determinately) applies to all objects as blue as, or bluer than, o. When an object  $o_{new}$  for which the term had previously been undefined is called '*bluege*' in a context  $C_{new}$ , and conversational standards are thereby adjusted, the property selected as semantic content in  $C_{new}$  (determinately) applies to objects perceptually indistinguishable in color from  $o_{new}$ , plus those discriminately bluer. The resulting line between items to which '*bluege*' applies and those for which it remains undefined will be as sharp as the notion of objects being perceptually indiscriminable in color.<sup>14</sup> Although it is easy to be deceived about precisely where this line is, its location can, in principle, be identified.<sup>15</sup> Let  $o_1$  be perceptually indistinguishable from  $o_{new}$ , and  $o_2$  be perceptually indiscriminable from  $o_1$  – each located just one indiscriminable step beyond its predecessor in a sorites sequence. Looking at the pair  $\langle o_{new}, o_1 \rangle$  and correctly judging them to be indiscriminable, one can come to know of  $o_1$  that it falls within the extension of '*bluege*' in  $C_{new}$ . A similar point holds for  $o_2$  – which, though

---

<sup>14</sup> This statement of the rule for adjusting the extension of the predicate is a rough approximation. A more accurate statement stipulates that '*bluege*' comes to apply to all objects with the surface spectral reflectance property causally responsible for the perceptual indiscriminability from  $o_{new}$  of all, or nearly all, of those objects the color of which is indiscriminable from  $o_{new}$ . This opens up the possibility of isolated instances of "fools *bluege*," in which something may be indiscriminable from  $o_{new}$  for nonstandard reasons, without having the surface spectral reflectance property required to count as *bluege*, as well as possibility that some objects with the property might – for extraneous reasons -- not be perceptually indiscriminable from  $o_{new}$ . (Similar remarks apply to clause concerning objects discriminately bluer than  $o_{new}$ .) Although these standard natural-kind complications are mostly irrelevant to our concerns, they do introduce another source of potential vagueness ("casually responsible .... for all or nearly all ...).

<sup>15</sup> For discussion, see *Understanding Truth*, 212-217.

indiscriminable from  $o_1$ , is discriminately less blue than  $o_{\text{new}}$ . Correctly judging this to be so by looking at  $o_{\text{new}}$  and  $o_2$  together, one can come to know that ‘bluege’ is undefined for  $o_2$  in  $C_{\text{new}}$ .

So far, we haven’t found any facts about ‘bluege’ that are in principle unknowable. The best place to look for such facts is the line between the default determinate-extension of ‘bluege’ and the objects for which it is initially undefined. Up to now, I have treated this line as if it were sharp. However, that’s an artifact of the example. In my fable, ‘bluege’ is originally introduced as a partially-defined term, in which the boundary between the objects to which it applies and those for which it is undefined is determined by a universally agreed upon, authoritative stipulation. When context sensitivity was introduced, I imagined this boundary simply remaining in place, with the initial semantic content becoming the default content of the new term. The resulting semantic model – though realizable in principle – isn’t realistic in practice. In more realistic cases, the default semantic content of a context-sensitive term will depend on an overall pattern of agreement among uses by different speakers. In such cases, the boundary between what’s in its default extension and what isn’t will be blurred.

Since this boundary is indeterminate, no single partially defined property can, strictly speaking, be said to be *the default semantic content* of the term.<sup>16</sup> Instead, there will be a family of barely differing properties, each of which is a candidate for being that content. Since it is indeterminate which of these properties is the default semantic content of the term, there will be a limited range of cases in which it is indeterminate whether the claim that ‘bluege’ applies to  $o$  is true because the rules of the language, plus facts about  $o$ , *determine* that its true, or because the speaker has exercised minimal discretion in adjusting the extension of ‘bluege’ to include  $o$ . What *precisely* is the range of this indeterminacy? Although speakers typically won’t care, the question *is* both troubling and theoretically puzzling. I don’t see any good alternative to the Williamsonian view that

---

<sup>16</sup> For a detailed explanation of the reasons for, and consequences of this, see “Higher-Order Vagueness for Partially Defined Predicates.”

– somehow – the question has a definite answer, even though we can't find it. If that's right, then context sensitivity and partial definition don't tell the whole story about vague language.

### **A Modest Case for Partial Definition and Context Sensitivity**

I conclude with a pair of modest arguments – first, that partial definition is part of the story, if context sensitivity is, and second, that context sensitivity is part of the story, if partial definition is. In other words, accounts of vague language that include both partiality and context sensitivity have advantages over those that employ only one.

The first argument rests on an assumption that at least some vague terms are context sensitive, in the sense of having different semantic contents in different contexts of utterance. The meaning of such a term is a function from contexts to members of a family of related properties. Our question is whether all of these properties have to be totally defined. The case that they don't is based on the idea that the context sensitivity of a vague term is limited. For example, there are limits on what can truly and literally be called 'green', and limits on what can truly and literally be called 'not green'. If 'green' is context sensitive, these limits will be reflected in the family of contextually possible semantic contents of 'green'. No member of the family will apply to scarlet red roses, or fail to apply to healthy, well-watered patches of grass. If, in addition, 'green' is partially defined, then the set of things to which every member of the family (determinately) applies will be its *default determinate-extension*, while the set of things to which no member (determinately) applies will be its *default determinate-antiextension*. If, on the other hand, the term is required to be totally defined, there will be a corresponding pair of sets. Call them *the minimal non-negotiable extension* and *antiextension* of the term. Either way, both theoretical models must specify the range of linguistically possible contextual variation in literal uses of the term. In both cases, this range will be subject to seeming indeterminacy and / or impenetrable Williamsonian ignorance.

The two models differ in that, in the totally-defined model, this ignorance comes on top of a different, and prior, form of impenetrable ignorance. For each contextually legitimate use of the totally-defined term, there must be a precise, but unknowable boundary separating things to which it applies, from those to which it doesn't. How this boundary is determined is, according to the model,

shrouded in mystery. There is no corresponding mystery with the partially defined model. Once the range of contextual variation is determined, the extension and antiextension of the term, when used with its default semantic content, is completely given. Since subsequent contextual adjustments are essentially matters of stipulation, plus a similarity relation associated with the term, any further indeterminacy or ignorance is limited to vagueness or indeterminacy about the stipulation, or the similarity relation -- unclarity about whether the speaker has really referred to *this object o* and called it 'green', or about whether, if he has, some other object *o'* is discriminably greener than, or perceptually indiscriminable in color from, *o*.<sup>17</sup> Although there may be cases in which there are no knowable, or even determinate, answers to these questions, this area of indeterminacy or mysterious ignorance is sharply limited, and highly circumscribed. One loses this, if one insists on bivalence and total definition in every case. Since it is better to have less extensive theoretical mystery than more, there is something to be said for including partial definition in one's account of vague terms – if one decides that they are also context sensitive.<sup>18</sup>

The second argument – for the desirability of context sensitivity given partial definition – involves the explanation of our differential reactions to apparent violations of different logical “laws.” I have already argued that the case for partial definition provides *prima facie* justification for rejecting certain instances of the “law” of the excluded middle. When *F* is undefined for *o* in the sense I have explained, and *n* names *o*, it is natural and correct to reject both the claim that [*Fn*]

---

<sup>17</sup> The similarity relation in question is the one that determines which objects are included in the contextually adjusted extension of the predicate as a result of the decision to include the new object *o*. On the partially defined model this is a relation born to *o* by all objects discriminately greener than *o*, *plus those perceptually indiscriminable from o*. On the totally defined picture, the relation will be much less restricted – applying to all objects discriminately greener than *o*, *plus (perhaps) those objects that are more similar in color to o than to the least green object in the antecedently determined antiextension*. Typically, the latter will allow much greater room for indeterminacy or mysterious ignorance.

<sup>18</sup> An earlier statement of this argument can be found on pp. 447-449 of my “Replies,” *Philosophy and Phenomenological Research*, 2, 2002, 429-452.

is true and the claim that  $[\sim Fn]$  is true. But then, the truism that a disjunction can be true only if one of its disjuncts is, leads one to reject both the claim *that  $[Fn \text{ or } \sim Fn]$  is true* and  $[Fn \text{ or } \sim Fn]$  itself. Whatever one's ultimate verdict on this result, the force of the reasoning is clear, and the attractiveness of the conclusion is easily recognizable. The same cannot be said for other consequences of the position. Corresponding to the truism about disjunction is a similar truism about conjunction – namely that a conjunction can be untrue only if one of its conjuncts is.<sup>19</sup> Given both this truism and the undefinedness of  $[Fn]$  and  $[\sim Fn]$ , one has no choice but to reject the claim *that  $[Fn \text{ and } \sim Fn]$  is untrue* -- in which case one must reject both the claim *that its negation,  $[\sim(Fn \text{ and } \sim Fn)]$ , is true*, and  $[\sim(Fn \text{ and } \sim Fn)]$  itself. But rejecting the law of non-contradiction seems far less defensible than rejecting excluded middle. Proponents of partial definition need some explanation of this.

In my opinion, there is no plausible way to retain the undefinedness of  $[Fn \text{ or } \sim Fn]$ , and its negation, without recognizing the similar undefinedness of  $[(Fn \text{ and } \sim Fn)]$ , and its negation -- when F is undefined for o. Thus, rejection of some instances of excluded middle should bring rejection of corresponding instances of noncontradiction in its wake. The reason that the rejected instances of noncontradiction seem correct, in a way that the corresponding instances of excluded middle don't, is that the former are prey to a certain metalinguistic confusion that the latter aren't. When, in addition to being partially defined, F is also context sensitive, it is easy to confuse the obvious truth

8. No matter what contextual standards one adopts governing F, it will not be the case that those standards (plus the nonlinguistic facts) dictate that  $[Fn]$  and  $[\sim Fn]$  are both true -- and hence that  $[Fn \text{ and } \sim Fn]$  is too.

with the undefined (and hence properly rejected) claims (9a-c).

- 9a.  $[(Fn \text{ and } \sim Fn)]$  is never true.
- b.  $[\sim(Fn \text{ and } \sim Fn)]$  always true.
- c.  $\sim (Fn \text{ and } \sim Fn)$

---

<sup>19</sup> Thanks to Nathan Salmon for reminding me of the parallel.

It is because of this confusion that we are reluctant to reject instances of the “law” of noncontradiction, even when they are undefined. A similar confusion of the metalinguistic triviality (10a) with the undefined claim (10b) explains our (misguided) reluctance to reject undefined instances of the “law” (10c).

- 10a. If a contextual standard dictates that  $[Fn]$  is true, then it will dictate that  $[Fn]$  is true.
- b.  $[If Fn, then Fn]$  is always true.
- c. If  $Fn$ , then  $Fn$

The proper explanation of these cases parallels the proper explanation of familiar so-called penumbral truths involving vague predicates. For example, although (11a) is undefined, it is easily confused with a metalinguistic truth (11b) that says something important about the partially defined, context sensitive predicate ‘is bald’.<sup>20</sup>

- 8a. If a man is bald, then he would be bald if he had one less hair.
- b. No matter what standards governing ‘is bald’ we adopt in a context, if according to those standards *he is bald* applies to a man, then according to those same standards it would apply to him if he had one less hair.

By contrast, there is no metalinguistic truth corresponding to the “law” of the excluded middle that makes us reluctant to reject undefined instances of them. The reason they seem easier to reject than some other classical “laws” is that rejecting them isn’t subject to the same pragmatic interference we encounter with the other laws. Logically, the different laws are in the same boat. Pragmatically, they differ in what they suggest about the context-sensitive semantic effects of context change. In this way, the proponent of partial definition can explain our differential reaction to violations of different classical “laws” – provided that the predicates in question are context sensitive, as well as partial.<sup>21</sup>

---

<sup>20</sup> See pp. 440-441 of “Replies.”

<sup>21</sup> Thanks to Jeff King, John MacFarlane, Sebastiano Moruzzi, and Nathan Salmon for their helpful comments.