

Tolerance and the Multi-range View of Vagueness

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Diana Raffman's 2013 book, *Unruly Words*, is a welcome addition to the vagueness literature, but it is much more than that: I think it has the potential to make real and lasting progress on some of the problems posed by vagueness.¹ I do not have a horse in this race yet, so instead of the usual "here is why my theory is better than hers," I want to emphasize what is potentially revolutionary in her view. Then I explore some tensions and think through some ways of resolving them. In particular, I begin with her experimental work on tolerance and the sorites paradox, and then consider her multi-range view and its semantic theory.

1. In my view, Raffman's discussion of tolerance principles is the most exciting part of her book because it has the potential to reorient the debates about vagueness. In general, tolerance is the insensitivity of predicate application to small enough differences between objects, but vagueness theorists differ widely on how to formulate specific tolerance principles. Raffman's formulation is:

The increments between adjacent items in a sorites series are sufficiently small as to leave the application of the predicate unaffected.²

She emphasizes the fact that tolerance principles are the most conspicuous premises in the sorites paradox. Approaches to the sorites typically either reject the tolerance principles used to derive the contradiction or reject one of the logical principles involved in the derivation. Those of us who think that solving the sorites is a poor reason to reject classical logic are forced to reject tolerance; moreover, the traditional wisdom is that tolerance is so central to the use of our vague expressions

¹ Raffman, Diana. (2013). *Unruly Words*. OUP.

² p. 123.

and concepts that no one would deny it except out of desperation. Raffman's research on tolerance should turn this conventional wisdom on its head.

Roughly, Raffman (and her collaborators) found that competent speakers do not obey tolerance principles—the subjects classify indistinguishable color patches differently, and even judge the same color patch to be blue at one time and green at another. They also display hysteresis (i.e., sensitivity to past usage) when forced to go back and forth in forced march sorites series. If her results are robust and hold up under further experiments, then we can conclude that competent speakers egregiously violate tolerance principles with abandon. The upshot would be that there should be no pressure on a theory of vagueness to accept tolerance principles—quite the opposite: respecting tolerance should be considered a bug rather than a feature.

Still, Raffman is writing in a climate where rejecting tolerance is thought to be a heavy cost. As such, those who deny tolerance usually offer a “plausible” alternative principle that is somewhat similar to tolerance, and they claim that competent speakers who find tolerance compelling must have been thinking of the alternative principle. Raffman engages in this practice as well, and she suggests the following as an alternative principle:

The increments between adjacent items in a sorites series are sufficiently small as to make any differential application of the predicate as between them, arbitrary.³

However, I am not a fan of this “bait and switch” game played by contemporary vagueness theorists. It is wildly implausible to think that competent speakers will say, “sure losing a dollar might make a rich person no longer rich, but only if there is an arbitrary difference between the judgment that he is rich and that he is not rich.” No one thinks that. Therefore, this part of Raffman's view fails, but she is in good company here since this problem is ubiquitous. It is also somewhat curious because she also offers a pragmatic rule: roughly, objects that differ only

³ p. 123.

incrementally when considered pairwise should be classified the same.⁴ This principle is backed up by her experiments, so if she were going to offer a “substitute” for tolerance, this should be it. I am not convinced that vagueness theorists need not be in the business of explaining philosopher’s intuitions that tolerance principles are true in the first place, but one thing is clear: they need not apologize for theories that violate tolerance, because that is what *we* do—violate tolerance.

I anticipate an objection: if asked ‘Is a rich person who loses one dollar still rich?’, competent speakers will probably give mostly “yes” answers. However, this sort of principle, on one interpretation (e.g., for all *x* and *y*, if *x* is rich and *y* has one dollar less than *x*, then *y* is rich), can generate a sorites paradox. Shouldn’t that count as acceptance of tolerance by competent speakers? The reply should be that the reading in question is false because there are cases where competent speakers attribute richness to someone even though, a moment later, they might deny that someone with even slightly *more* money is rich. So why might we see these recalcitrant data? My guess is that the person queried assumes various things about the rich person. In particular, the assumption is that it is a paradigm case or central case of being rich—not a borderline case. If so, then the question is read like a generic (e.g., ‘Does a dog have four legs?’). Of course, this explanation requires empirical support that, as far as I know, it does not have. So at this point it is just a hypothesis.

2. Let us turn to Raffman’s multi-range view. The central claim is that vague expressions have multiple ranges of permissible application and competent speakers may use vague expressions in accord with any one of these ranges. A range of application is not an extension—it is an interval of acceptable values on some scale (more on this below). The range of application utilized by a speaker in context is not intentionally chosen; rather, the speaker’s arbitrary responses to stimuli dictate

⁴ p. 175.

which range of application is in effect for that context. For example, a borderline red/orange patch might just strike a speaker as red because of idiosyncratic subpersonal cognitive processes, recent history of application, and other factors; these determine a range of application.

It is not as easy as one might expect to pin down the details of the multi-range view.

Raffman writes:

Possession of multiple arbitrarily different ranges of application is probably not by itself sufficient for vagueness. In particular, it may be that in order for phi to be vague, the higher-order predicate 'range of application of phi' also must have multiple arbitrarily different ranges of application. In other words, maybe if phi is vague, competent speakers must be permitted to vary and diverge arbitrarily not only in their applications of phi but also in their applications of range of application of phi: they must be permitted to vary and diverge as to what counts as a competent way of applying phi relative to a given V-index. (105)

The passage begins with the claim that having multiple ranges of application is not sufficient for vagueness; so Raffman needs to add something to being multi-range in order to arrive at a sufficient condition for being vague. One would then expect her to offer whatever extra requirement would give her a sufficient condition. However, in the next two sentences, she has switched to giving a *necessary* condition on vagueness. The conclusion of the passage is clear: Raffman thinks that being multi-range is necessary for vagueness and that being higher-order multi-range is necessary for vagueness as well. As far as I can tell, she does not offer a sufficient condition.

The claim that being multi-range and being higher-order multi-range is *sufficient* for vagueness seems fine, but it is very uninformative given the nature of being higher-order multi-range (see below). Raffman's view, that being higher-order multi-range is *necessary* for vagueness, is implausible. What if the word for redness is vague in my language but my language does not contain 'range of

application' or any synonym? How are we to understand the necessary condition in this case? Must there be some language that has such an expression? A natural language? The vast majority natural-language time-slices (i.e., natural languages as they are at a particular time) over the last few thousand years have no expression for 'range of application' at all (remember, these are not extensions—they are intervals of values used by a technical semantic theory). Thus, if the necessary condition is true, then there were no vague terms at all until someone coined 'range of application'; that is a deal-breaker for any vagueness theorist. Instead, perhaps Raffman thinks 'range of application' would have to belong to any language used by a theorist to state a semantics for the vague expressions in my language. On this reading, it would mandate something about 'range of application' in languages totally unrelated to my language; i.e., that the expression 'range of application' is multi-range. Does Raffman think it impossible for 'range of application' or any of its synonyms to be precise in any language? Why would that be? Does it also follow that it is impossible to do semantics for a language with vague terms using a precise language? That seems decidedly odd. It also seems like a condition not worth defending given Raffman's goals.

Regardless of these oddities, there is another problem with thinking that being higher-order multi-range is a necessary condition for vagueness. If 'red' is a higher-order multi-range predicate, then 'range of application of 'red'' has multiple ranges of application, and 'range of application of 'range of application of 'red'' does as well, and so on. What would it be for 'range of application of 'red'' to have multiple ranges of application? According to Raffman, a range of application is just a set of values (hues in the case of 'red'), but she writes as if these have a considerable amount of structure in addition—essentially, she presupposes that the values are linearly ordered and that a range of application is an interval on this ordering.⁵

⁵ pp. 97-99.

If ‘range of application of red’ is multi-range as well, then there are multiple ranges of application for ‘range of application of red’; thus, there are various sets of some kind of value (analogous to a hue). What could those be? One thing is clear: these values are *not* ranges of application for ‘red’. Ranges of application for ‘red’ are members of the V-extension of ‘range of application of ‘red’’, and we must carefully distinguish ranges of application (e.g., hues) from V-extensions (e.g., objects instantiating those hues).⁶ Assume the following intervals are the ranges of application for ‘red’ on a wavelength scale: [620-740], [621-740], [621-741], [620-741]. We are looking for a range of application for ‘range of application of ‘red’’. The thought has to be that there are other possible intervals on the scale of wavelengths that could have been included as ranges of application of ‘red’, but were not. So another set of ranges of application for ‘red’ might be: [619-740], [620-740], [620-741], [619-741]. However, I do not see how to construct a scale of values such that: (i) each of the above ranges of application (intervals of wavelengths) instantiates one of the values, and (ii) all the ranges of application in each set instantiate the values constituting an interval on that scale. If there is no such scale of values, then there are no ranges of application for ‘range of application for ‘red’’.

Therefore, we have good reasons to consider amending this aspect of Raffman’s theory. Why does she appeal to being higher-order multi-range in the first place? She is, rightfully in my mind, worried about cases like the following example: imagine if ‘rich’ had exactly three ranges of application on an income scale, [\$120,000, -), [\$119,999, -), and [\$119,998, -). In that case there would be a smallest income for which it is permissible to call people with that income rich (i.e., \$119,998). And that does not seem consistent with ‘rich’ having blurred boundaries, which for

⁶ V-extensions are Raffman’s substitute for extensions in her semantic theory; I discuss them below.

Raffman is the essence of vagueness.⁷ Therefore, her worry is that with ranges of application alone, there are first permissible breaks and last permissible breaks on the scale.

However, this is a problem that can be remedied without the baroque and implausible hierarchy of ‘range of application’ predicates. It is sufficient to demand that every scale is dense in values (i.e., between any two there is another) and demand that ranges of application are *open* intervals of values on a scale. Now there is no first permissible stopping point or last permissible stopping point because open intervals have no endpoints. I am sure there are more elegant conditions, but I will not pursue them here. Moreover, there might be other (unmentioned) reasons Raffman wants the higher-order multi-range condition, and it might be that my condition does not speak to them.

The main points are: (i) Raffman’s central claim about the nature of vagueness involves a necessary condition that is hopelessly implausible, (ii) the main problem is her appeal to a hierarchy of ‘range of application’ predicates to avoid a certain problem with first and last permissible stopping places in sorites series, (iii) that problem can be avoided entirely by a minor change in the definition of ‘range of application’, and (iv) with that settled, one can just take the multi-range theory to be: *all and only vague expressions have multiple ranges of application.*

Objection: even if ranges of application are open intervals, there *is* a greatest degree of non-richness on any range of application. That seems about as bad as having a least degree of richness. Reply: It is not obvious that ‘A is non-rich’ and ‘It is not the case that A is rich’ have the same truth conditions. The former entails the latter, but not vice versa (e.g., if A is not the kind of thing that can be rich). If ‘rich’ in ‘x is rich’ and in ‘it is not the case that x is rich’ has the same range of application, then the latter does not, strictly speaking, have a range of application, because it would not be an open interval. But that is not a problem—in the semantics, we get a V-extension for ‘it is

⁷ p. 105.

no the case that x is rich' not by considering its own ranges of application, but rather by getting a V-extension for 'rich' and taking the compliment. On the other hand, 'non-rich' has its own ranges of application and some of them overlap with some ranges of application of 'rich'. Now back to the worry: is there a greatest degree of non-richness on any range of application? No. If 'non-rich' has its own ranges of application then they will be open intervals, and there will not be a greatest degree of non-richness on any range of application. As far as I can tell, that dissolves the worry.

Even if that problem is solved, there are still worries about how to interpret the ranges of application in the semantics Raffman offers. A standard way to think of a truth conditional semantics (Kaplan's is an example, and it is operative throughout *Unruly Words*) is that it connects up to the pragmatics in the following way: a predicate gets assigned an extension and a sentence gets assigned a truth value in a context of utterance. The extension derives from the content of the predicate together with the point of evaluation (which usually consists of a world, but can include a time). For Raffman, the context of utterance and the lexical meaning of a vague predicate determine a content for the predicate, but a given content and a world do not determine an extension for that predicate. In addition, one needs a range of application, and for Raffman, what is determined is a V-extension, not an extension. A V-extension for a predicate F is a set of things to which it is permissible to apply F . Presumably, the union of all the V-extensions for F consists of all the entities it is permissible to call F .

Traditionally, however, a semantics assigns each predicate F an extension (a set of things that *are* F). We can get from V-extensions to extensions by assuming that any entity it is permissible to call F is F — is this a principle Raffman endorses? She doesn't say, and I find it difficult to understand how she has offered a truth-conditional semantics without it. It is also somewhat strange that that permission is bound up in the semantics in a way that obligation is not. Does Raffman think that for each predicate F , there is a set of things that one is obligated to call F ? If so,

then she seems to think this would be a pragmatic matter and not reflected in the semantics.

However, I do not see why the things any competent speaker *ought* to call F and the things any competent speaker *may* call F are not on par, semantically speaking. Maybe Raffman has a good reason for this division of labor, but as far as I can tell she has not shared it.

One final worry about how concrete reality determines ranges of application: we use vague terms all the time when talking about things for which we have no psychological mechanism of the sort Raffman uses in her examples, which mostly concern people being presented with color patches or people's incomes. For example, I did not see Brenda, but I know today is Tuesday and I know that she always wears a red shirt on Tuesdays. I assert 'Brenda is wearing a red shirt'. It turns out that her shirt is borderline red[orange]. Is my sentence true in that context? What is the range of application? How is that an arbitrary choice? Where exactly would that come from? My psychology at this moment? Hers?

One way for Raffman to reply would be to recognize that, in the Kaplanian framework she uses, ranges of application might as well be thought of as nonstandard parameters in the points of evaluation. If so, then Raffman's framework is similar to the one used by contemporary semantic relativists (non-indexical contextualists and assessment-sensitivity theorists).⁸ Indeed, she even emphasizes that in vagueness, one often one encounters faultless disagreement, and this is also a feature of semantic relativist treatments. Raffman does not mention retraction, which is often taken to be a key feature of assessment sensitivity, but not of non-indexical contextualism. However, her experiments showed some retraction, especially in the hysteresis cases. One might say that it would thus be more natural to treat the multi-range view as global assessment sensitivity, with the ranges of application taking the places of standards or judges. I think such a view is too hasty given the complexity surrounding semantic relativism, but thinking of the multi-range view in these terms

⁸ See Macfarlane, John. (2014). *Assessment Sensitivity*. OUP.

places it within an established semantic tradition, with recognized lines of reply to common objections.⁹

One disanalogy comes to mind. For the semantic relativist, the determinants of truth value are available to at least some of the participants in the conversation (which I take to include assessors). Whereas for Raffman, the range of application for a particular use of a predicate is determined (at least in part) by the cognitive state of the person applying it. Because this state is largely subpersonal, no one knows what it is; even the theorist who advocates Raffman's theory is unable to specify the truth conditions of sentences in which vague terms occur. At the very least, this conclusion would require some defense and perhaps mandate a rethinking of the role semantic theories should play in linguistics and philosophy of language.

Overall, Raffman's work on tolerance is groundbreaking, and the multirange view (suitably modified and interpreted) is not just an attractive classical alternative to epistemicism; it is an empirically supported, conservative, and elegant theory of vagueness. It should attract attention from all quarters.

⁹ For example, it would be similar to the global non-indexical contextualism advocated in François Recanati's *Perspectival Thought* (OUP, 2007) and Mark Richard's *When Truth Gives Out* (OUP, 2008).