Raffman's Unruly Words

Graeme Forbes

1. Introduction

It's unsurprising that there is so much work in contemporary philosophy on vagueness. Historically, the modern development of logic was primarily concerned to codify the canons of reasoning employed in mathematical proofs. A striking feature of the mathematical realm is that it's one which is *sharp:* there's no such thing as a borderline odd number, and the languages of pure mathematics don't contain vague expressions of other categories, e.g., none of Hilbert's problems use *many* in their formulation. So when we turn to the description of the empirical realm, we cannot avoid the question whether the apparent lack of sharpness requires that accommodations be made.

One view I mention for reference is that *no* accommodations need to be made, since the empirical realm, however different its subject-matter, is *no* less sharp than the mathematical; this is *epistemicism* (Sorensen 1988; Williamson 1994). In particular, if *F* is a predicate whose application is typically persistent across small changes in some quantity but not persistent across some large ones, then if some such large change is decomposed into a series of small changes, there will be a particular (atypical) small change which unseats the predicate. On this view, the term *vague* simply marks the epistemic inaccessibility of *which* small change does the damage.

For example (Forbes 2011:92), take the concept of being well-paid$_C$ by one's employer, where C is a reference-class and we are concerned only with individuals belonging to it; C might be, say, the class of Full Professors in humanities departments in the current *US News and World Report* top 50 research universities in the U.S.A. (this is to specify what Raffman calls a *V-index*). It seems plausible that if any member of this group is well-paid$_C$, then any other member of the group who is paid less, but no more than \$1 less, than the given member, is also well-paid$_C$. Suppose it is true that members of C are well-paid$_C$ if they are paid a nine-month salary of \$150,000 or more, and not well-paid$_C$ if they are paid \$75,000 or less. Then if $a_0,\ldots,a_{75000}$ are 75001 members of C such that a_0 is paid \$150,000 and a_i is paid \$1 more than a_{i+1}, we have our example of a predicate which can be unseated by a large change in magnitude of the relevant quantity (amount of salary). And since this change can be decomposed into a sequence of one-dollar drops in salary, one of these drops must mark the transition from being well-paid$_C$ to not being well-paid$_C$. For if none do, there is no transition, and so, contradicting our premise, a_{75000}'s having a salary of \$75,000 makes a_{75000} well-paid$_C$. We may anticipate that a_{75000} would beg to differ.

That some one-dollar drop marks the transition implies that there is a one-cent drop that marks the transition. And so we reach the conclusion that for all we know, a full professor in a humanities department in the current *USN&WR* top 50 national research universities is well-paid$_C$ iff he or she has a salary of at least \$92,367.41, and that's just the way it is. I respectfully suggest that it's because this is not really intelligible that epistemicism has not caught on. The intuition that there are no abrupt transition-points is very powerful (for good reason).

But there is no agreed-upon alternative. The above Sorites reasoning can be formulated as a *modus ponens walkthrough*, in which each premise is a conditional with a conditional consequent, of the general form:

(1) If a_{i+1} is paid exactly \$1.00 less than a_i, then if a_i is well-paid$_C$, a_{i+1} is well-paid$_C$.

Empirical facts allow all the consequents to be detached, and then *modus ponens* generates the antecedents of the resulting conditionals one by one, except for the first one, whose antecedent is the empirical fact that a_0 is well-paid$_C$. Alternatively, we may simply detach all the consequents of the instances of (1) and apply transitivity, to reach the clearly false conditional 'if a_0 is well-paid$_C$ then a_{75000} is well-paid$_C$'.

So far as I can see, there are really only two ways to avoid bad outcomes from Sorites reasoning like this (and closely related arguments that use the principle 'from $\neg(p \wedge \neg q)$ and p infer q' – (Wright 1987)): either there is something wrong with one or more premises, or there is something wrong with the logic. The wrong-logic option subdivides according to whether the fallacy is one of formal or informal logic. If it's formal, this means we have somehow been duped into thinking that *modus ponens* or transitivity are appropriate for reasoning about the empirical realm. If it's informal, there are various possibilities, but the fallacy of shifting the context is a popular candidate (Kamp 1981; Pinkal 1984; Soames 1999), perhaps along with some kind of error of conflation. It would also be helpful to be provided with an *explanation why* the premises all seem fine, or why the logic seems indisputable, or why we fail to notice we are committing an informal fallacy.

Raffman's account of the flaw in Sorites reasoning is of the first sort: there are bad premises. This is a consequence of her *multiple range* semantics for vague predicates, my understanding of which is as follows. The application of a vague predicate is context-relative, but the predicate will have some invariant content. For example, *well-paid* has the invariant content *at or near the upper end of the pay scale*, whether we are talking about academic salaries or paying neighborhood children to shovel the driveway after a snowstorm. Such an invariant content has parameters which are filled in by the context. First, the context provides a V-index: this will fix, for example, whether it's nine-month academic salaries or snow-shovelling payments that are at issue, what the contrasting category is (e.g., the averagely paid), and precisely which group of people we are talking about. Applying the invariant content to the V-index produces a family of so-called *V-extensions* for the predicate,[1] where each V-extension is a set of persons such that it is permissible to apply the predicate to the persons in that set; that is, a V-extension is an ordinary bivalent function on the domain of the context. If it's obligatory to apply *well-paid* – if Professor X is on a cool half-million – X will be in all the V-extensions, but if X's salary is such that we can just as well withhold *well-paid* as apply it, then X will be in some V-extensions and not in others.

1. There is an intermediate step in Raffman's apparatus (96–7): applying the invariant content to the V-index produces *ranges of application*, each of which, in our running example, would be a listing of all the salaries that can permissibly be said to make you well-paid (there are multiple ranges since we can permissibly draw the line in various places). The V-extension for each range is the set of people that have those salaries. This distinction doesn't play a role in my discussion, so for simplicity I'm collapsing it.

In this case, relative to some V-extensions, *X is well-paid* is true, and relative to others, false.

It's worth asking, before turning to Raffman's account of Sorites reasoning, what it means to say that it's permitted to apply *well-paid* to X and also permitted to withhold it. This is explained in terms of *competence* (36–7): *you* may say that X is well-paid$_C$ because X earns a salary of $90,000, *I* may deny it, perhaps by saying that X is averagely paid$_C$, and neither of us betrays incompetence in our uses of *well-paid*. This is in turn because it's largely *arbitrary* which predicate we use for people in *C* earning salaries of roughly that amount. But why is it arbitrary which predicate we use? It is impossible to avoid the use of vague language in explaining this, but the explanation, I think, is that we know certain paradigms of being well-paid$_C$ and we know certain paradigms of being averagely paid$_C$, and X's salary of $90,000 puts X at some distance from both groups of paradigms, perhaps roughly the same distance from each. This notion of distance from paradigms seems to be crucial in explaining the vagueness of most of the vague expressions discussed in the literature. Indeed, Sorites paradoxes can be understood as consequences of two rules that vague expressions seem to be governed by:

(2) a. The *Don't Stray* rule: don't stray too far from the paradigms

b. The *Don't Distinguish* rule: don't distinguish cases that are indistinguishable.

Don't Distinguish carries us along a Sorites series for a while, until it is overruled by *Don't Stray*.

Raffman's notion of a V-extension for a predicate is that of a bivalent function which imposes a sharp cut-off in a region where someone could refuse to continue applying the predicate in a Sorites series without thereby manifesting linguistic incompetence: the cut-off point is a *permissible stopping place* (130), or, in the terms of (2), *Don't Stray* overrules *Don't Distinguish*, but neither too early nor too late. However, for a given vague predicate there will be more than one permissible stopping place, so more than one V-extension. What, then, is the moral for Sorites reasoning?

Raffman says that her approach is not a form of supervaluationism, the main difference in this context being that her account 'identifies everyday truth with truth relative to a *single* [V-extension]' (103, emphasis added)[2], as opposed to the identification of truth with supertruth. But her objection to Sorites reasoning is that the major premise is 'never true', where the major premise is a universally quantified version of (1):

(3) $(\forall x)(\forall y)$(if y is paid exactly \$1.00 less than x, then if x is well-paid$_C$, y is well-paid$_C$).

(3) is never true, i.e., is classically false on each V-extension, since on each there is a pair (a_i, a_{i+1}) such that a_i is well-paid$_C$ and a_{i+1} isn't, despite earning a mere dollar less; the different V-extensions differ over the value of i. Raffman goes on to say that this makes the likes of (3) 'necessarily false' (122) and so, presumably, false.

In view of this, it seems to me that Raffman faces what we might call a *supervaluationist/epistemicist dilemma*. Perhaps (3) is false because each V-extension generates a classically false instance. But then Raffman faces the

2. Raffman says 'range of application' – see note 1, p.4.

same objection as the supervaluationist. We can list the conditional premises of a modus ponens walkthrough, and be assured that *at least one is false* (this statement is supertrue). So then we point at each premise in turn, and ask: is *that* one false? Each time this question is asked, supervaluationists shake their heads (each premise is either supertrue, i.e., true, or untrue-but-not-false). Eventually we have exhausted the premises, without any being identified as false. What's the matter, did we miss one? No. So, I submit, we have established that *no* premise is false, not that at least one is! In other words, supervaluationism unintelligibly fractures the semantic relationship between quantified sentences and their instances. I doubt that Raffman wants to endorse this.

Alternatively, Raffman's remark that (3) and its ilk are necessarily false could be understood in an epistemic way: false on every V-extension guarantees false on the V-extension *that matters*, even if we can't say which V-extension this is. In other words, some V-extension is *designated:* the truth-values it induces are the truth-values, period, of the premises (this is her official view on p.103). But a V-extension imposes a sharp cut-off, so a designated V-extension whose identity is hidden reinstates the thought that, for all we know, we are well-paid$_c$ iff we are paid at least \$92,367.41. I said earlier that this isn't intelligible. My reason for saying this is that such a sharp cut-off is either an inexplicable brute fact – this itself seems unintelligible to me[3] – or it is explicable and obtains in virtue of something else. The problem with the second option is the lack of candidates, though I'm always open to being corrected about this.

3. I don't deny that it might be non-trivial to explain *why* a sharp cut-off in the likes of *well-paid* couldn't be a brute fact.

Raffman recognizes that a proposed solution to the Sorites paradox should come with an explanation of *why* Sorites reasoning seems sound, and in particular, why something like (3) seems true. The explanation she proposes (172–5) cites the results of an experiment in which subjects were presented with pairs of adjacent color patches from a blue-to-green Sorites sequence p_0, p_1, p_2, p_3,… and asked to classify the members of each pair (p_0,p_1), (p_1,p_2), (p_2,p_3)…, one pair after another in this order, as blue versus borderline. Subjects nearly always classify the members of each presented pair the same way, as both blue or both borderline – they respect *Don't Distinguish* on a pair-by-pair basis. But starting out with 'both blue', they eventually switch to 'both borderline' (because, I would say, they notice when looking at a patch in some pair (p_i, p_{i+1}) that they are in danger of violating *Don't Stray* if they say 'both blue' again). Raffman's idea, then, is that we only assent to the likes of (3) because we think of items in a Sorites series as pairs of adjacent items (175): presented with any one pair, in my terms, *Don't Stray* is always subjugated to *Don't Distinguish*.

I am doubtful that in evaluating (3) we think of adjacent items in some special manner that explains (away) the appeal of (3). It just seems obvious to me that if I am well-paid$_c$, and you earn less than me but the difference wouldn't buy me anything at the local five-and-dime, then you too are well-paid$_c$. And the experimental subjects seem to think this too, since they must be aware that in switching on (p_i, p_{i+1}) they are inconsistently classifying p_i as blue at one step and as borderline at the very next step (that was then, this is now, a contextualist might say). But they are driven to do so by trying to observe both of the apparently conflicting principles in (2). Of course, they and I may be mistaken in taking *Don't Distinguish* to be a principle governing the *meaning* of vague predicates, and Raffman's main move here is to suggest that it's only a pragmatic rule of thumb (175). But this would mean that as far as the semantics goes, *Don't Distinguish* (even if reformulated to quantify over pairs) has possible counterexamples. And so we veer back towards the epistemicist horn of the dilemma I raised earlier. Maybe I am well-paid$_C$ because I make \$92,367.41, while you are merely averagely paid$_C$, being stuck on \$92,367.40. I don't think my resistance to this can be explained as the result of being hoodwinked by pragmatics. [But I do admit that if both principles are semantic, we are teetering on the edge of endorsing a Dummett-Wright incoherence thesis (Dummett 1975; Wright 1975).]

It seems to me that of all the semantic theories which one way or another call into question principles like (3) and *Don't Distinguish*, the degrees-of-truth account has the best explanation of why such principles *seem* true. On its account, the premises of a Sorites argument are all either wholly true, or at the very worst, slightly less than wholly true, reflecting the fact that in an instance with the form of (1), for some i, 'a_i is well-paid$_C$' is wholly true while 'a_{i+1} is well-paid$_C$' is slightly less than wholly true, resulting in a slightly less than wholly true conditional.[4] If one accepts the apparatus of degrees of truth in the first place, it's easy to believe that the difference between being wholly true and being slightly less than wholly true would not loom large for us, accounting for acceptance of (1) and (3) and the appearance of analyticity in *Don't Distinguish*.

The problem is that degrees of truth are no better than classical truth-val-

4. I'm assuming the usual clause for 'if', namely, that $dt[p \rightarrow q] = 1-[dt(p)-dt(q)]$ if $dt(p) \geqslant dt(q)$, = 1 otherwise. So if $dt(q)$ is almost but not quite as high as $dt(p)$, $p \rightarrow q$ is almost but not quite wholly true.

ues at avoiding abrupt transitions. For example, in a Sorites paradox, we start with a first conditional premise that is wholly true, say 'if a_0 is well-paid$_C$ then a_1 is well-paid$_C$'. If we are not to conclude that a_{75000} is well-paid$_C$, there must then be a *first* conditional premise that is slightly less than wholly true, $\lesssim$-1 for short, so its antecedent is 1 and its consequent, $\lesssim$-1. This conditional marks an unintelligible break between those who fully satisfy 'well-paid$_C$' and those who fail to fully satisfy it, though not by much. And which conditional premise is this? Since there are only finitely many premises, we can take each one by one and ask: is *this one* the first $\lesssim$-1 premise? The answer has to be that there is no fact of the matter which is the first $\lesssim$-1 premise. This response implicitly appeals to higher-order vagueness, a phenomenon which comes in for some rough handling in *Unruly Words*, so I will end by trying to defend it.[5]

There is no room for higher-order vagueness, understood as being a borderline case of a borderline case, on Raffman's account of *borderline case*. She holds (38) that a borderline case of being *F* is always a borderline case with respect to some *proximate incompatible* predicate *G*, where *F* and *G* are proximate incompatibles iff they are incompatible but there are items which 'can competently be classified as [*F*] and competently be classified as [*G*]' (37). The borderline cases determined by such an *FG* pair are neither *F* nor *G*. Raffman then infers that on her analysis, 'borderline cases cannot be defined

5. Suppose we start with a wholly true premise, $W(a_0) \rightarrow W(a_1)$, which is $1 \rightarrow 1 = 1$. Then there must be a first premise $W(x) \rightarrow W(x')$ such that $W(x) = 1$ and $W(x') \lesssim 1$. If we point to a specific premise and ask 'Is that it?', a possible reply is that there is no fact of the matter whether or not that premise is it, because there is no fact of the matter whether $W(x') = 1$ or $W(x') \lesssim 1$. But now we can ask if $W(x) \rightarrow W(x')$ is the first premise such that there's no fact of the matter whether or not it's the first $\lesssim$-1 premise. I would like to convince myself that we are making progress here. See (Forbes 2010) for an attempt to answer certain questions about the nature of degrees of truth using levels of higher-order vagueness.

between the clear *F*'s and the borderline *F*'s, because the borderline *F*'s are not-*F*' (49).

I have some questions about the details of the account. First, I wonder in what sense *F* and *G* are contraries. If *you* can't argue with my 'it's *F*' and *I* can't argue with your 'no, it's *G*', we have a sense in which it's both *F* and *G*. I also wonder about the account of *proximate* in terms of two-way classifiability. If Raffman is right to say that the borderline *FG*'s are not *F* and not *G*, why would a claim, concerning one of them, that it is *F*, be compatible with *competence*? If the thing isn't *F*, why is such a claim not rather *in*competent? Raffman is careful to note that in a framework in which there are potentially three semantic statuses, negation is ambiguous between *fixed point negation* – if *p* has the third status, so does not-*p* – and *semantic* negation – 'not-*p*' means 'it is not true that *p*', so if *p* has the third status, *not-p* is true.[6] It seems to me that in Raffman's explanation of her own analysis, *not* is best understood to be semantic negation. But then borderline borderline cases are not ruled out, since *x*'s being borderline borderline *F* is a way in which it can fail to be true that *x* is *F*.

However, Raffman also has a series of forceful independent arguments against higher-order vagueness. Here I shall limit my discussion to one of them (for "reasons of space", of course). This is the argument (Rumination 3, 67–8) that if *x* is definitely *F*, it's mistaken not to classify it as *F*. But it can never be mistaken not to classify something as borderline *F*. It follows that

6. See p. 33, where Raffman uses the terminology 'strong/weak' and notes the common 'choice/exclusion'. In both versions, I can never remember which is which, so I prefer the more descriptive *fixed point* and *semantic*. I suspect that in symbolic logic courses we force our students to translate the fixed-point negation that appears with auxiliaries (*won't*, *didn't*, *is not*) as semantic negation, since in *it is not the case that*, *the case* seems to be just a variant of *true*.

nothing is definitely borderline *F*. But then nothing is borderline borderline *F*, since by 'borderline borderline *F*' we simply mean 'not definitely *F* and not definitely borderline *F*'.[7] However, I require persuading that it can never be mistaken not to classify something as borderline *F*. In American football, certain calls on the field may be challenged by a coach, upon which the referee has 60 seconds to conduct a video review. The original call may only be overturned if the video shows the call was *definitely* wrong. The team that benefited from the original call might protest if it's overturned on review, and it seems to make sense for their protest to be that the action in question, say an alleged quarterback fumble, isn't definitely a fumble and isn't definitely an incomplete pass. So the referee was *mistaken* to overturn the call because the action *was* a borderline case, meaning that the original call wasn't *definitely* wrong.

But I am far from confident about my judgements concerning higher-order vagueness. I look forward to discussing these matters more, so long as I remember to bring aspirin.

7. The idea, I think, is that a borderline borderline *F* would owe that status in part to comparative facts involving it and definite borderline *F*'s. If the latter don't exist, the status *borderline borderline F* can't be occupied.

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