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JUST WHAT IS VAGUENESS?

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Abstract
We argue that standard definitions of 'vagueness' prejudice the question of how best to deal with the phenomenon of vagueness. In particular, the usual understanding of 'vagueness' in terms of borderline cases, where the latter are thought of as truth-value gaps, begs the question against the subvaluational approach. According to this latter approach, borderline cases are inconsistent (i.e., glutty not gappy). We suggest that a definition of 'vagueness' should be general enough to accommodate any genuine contender in the debate over how to best deal with the sorites paradox. Moreover, a definition of 'vagueness' must be able to accommodate the variety of forms sorites arguments can take. These include numerical, total-ordered sorites arguments, discrete versions, continuous versions, as well as others without any obvious metric structure at all. After considering the shortcomings of various definitions of 'vagueness', we propose a very general non-question-begging definition.

1. Introduction

The sorites paradox is one of the most resilient paradoxes in philosophy. A great deal of work in recent times has been devoted to dealing with this paradox and the phenomenon of vagueness which gives rise to it. But this work has largely been conducted in the absence of a good definition of 'vagueness'. As Stewart Shapiro (2006, p. 4) notes, it is rather odd that philosophers debate the correct philosophical theory of vagueness and yet no one can say what it is that the various theories are theories of. Worse still, without a definition of 'vagueness' it is not even clear that the various theories are theories of *the same phenomena*. There's no doubt that a definition of vagueness is highly desirable.

In so far as there is a common understanding of what vagueness is, it is in terms of permitting borderline cases. For example, a predicate such as 'red' is vague because there are cases of borderline red: reddish-orange objects, for instance. But this just pushes the problem back. Now we need to know what a borderline case is.

The obvious, and most common, answer here is that a borderline case is one that neither falls under the predicate in question nor does it not fall under the predicate.[1] One problem with this definition is that it presupposes that borderline cases involve truth-value gaps of some kind (neither true nor false), rather than truth-value gluts (both true and false). But it seems to us that a definition of 'vagueness' should not prejudice the question of how best to deal with vagueness, and both gappy and glutty approaches are serious contenders here. The standard definition, rules out a paraconsistent[2] glutty approach to vagueness right from the start. This observation is our point of departure as we try to produce a non-question begging definition of 'vagueness'. And just as importantly, we seek a definition that is general enough to capture the various forms the sorites paradox can take.

2. Two Approaches to the Sorites

Most philosophers are rather sympathetic to approaches to the sorites paradox that involve truth-value gaps. But hardly anyone is sympathetic to paraconsistent (or glutty) approaches to vagueness. We find this rather surprising, particularly in light of the fact that the most popular gappy approach – supervaluationalism – has as a dual glutty subvaluational approach (Hyde 1997, Hyde 2008). Although, one of the earliest logics of vagueness was a paraconsistent logic (Halldén 1949), glutty approaches have declined in popularity since then.[3]

For ease of presentation, it will be convenient to focus on a particular instance of a typical sorites paradox:

[1] For the most part, we'll confine our attention to the vagueness of predicates. Vagueness of singular terms might be thought to be another kind of vagueness. We disagree, but we won't enter into that debate here.

[2] A paraconsistent logic is one in which not everything follows from a contradiction. There are many paraconsistent logics and clearly some such logic is required when truth-value gluts (contradictions) are being countenanced. See Priest (2008) for details of some of these logics.

[3] Very recently, there has been renewed interest in paraconsistent approaches to vagueness, with several substantial proposals now on the table. This recent turn is in part due to arguments to the effect that the sorites and the liar are of a kind (Colyvan 2009 and Priest 2010). If this is right, those sympathetic to paraconsistent approaches to the liar would seem obliged to embrace a paraconsistent approach for the sorites as well. See, for example, Hyde and Colyvan (2008) for some ground clearing, and Weber (2010), Ripley (forthcoming), and Priest (2010) for well-developed paraconsistent proposals.

(P1) A one day old is a non-adult. (Base case.)
(P2) For all n, if an n-day old is a non-adult, then a $n+1$-day old is a non-adult. (Inductive clause.)

Therefore (by mathematical induction):

A 21915-day (or 60 year) old is a non-adult.

Undoubtedly, the front runner amongst philosophers and logicians, at least, for a satisfactory solution to sorites paradoxes such as the one above is the supervaluational account (e.g., Keefe 2000). According to supervaluationists, many claims about borderline cases are neither true nor false. So the sentence 'A 5844-day (or 16 year) old is a non-adult' is taken to be neither true nor false.[4] The supervaluationist, thus, rejects the inductive clause (P2) of the sorites argument. Moreover, she does this without accepting that there is a sharp cut-off between adulthood and non-adulthood.[5] The virtues of supervaluationalism are well known. One of these alleged virtues is that supervaluationalism preserves classical logic, in the sense that all the theorems of classical logic are theorems of supervaluational logic. In particular, although bivalence is given up by the supervaluationalist, excluded middle is preserved. So much for supervaluationalism. Now to a much underappreciated alternative: subvaluationalism.

According to subvaluationalism, claims about borderline cases are both true and false (see Hyde 1997, and Hyde and Colyvan 2008). The idea here is that a claim is true so long as it is true under at least one admissible precisification, and false so long as it is false under at least one admissible precisification. So the sentence 'A 5844-day (or 16 year) old is a non-adult' is both true and false, for reasons that should be clear. But the subvaluationist differs from her supervaluationist counterpart in the way she blocks the derivation of the paradox: the subvaluationist does not follow the supervaluationist in rejecting the inductive clause (P2) of the sorites argument; instead, she denies the validity of modus ponens (at least for the material conditional[6]). But with the super-

[4] Many claims about borderline cases are true. For example, the sentence 'a 5844-day old is a non-adult or it is not' is true.

[5] The supervaliationist does accept that there is some point at which the cut off occurs. What they don't accept is that it is determinate which of the many candidate cut-offs is the one that makes the existential claim true. In other words, they reject the distribution of the determinacy-operator over the existential quantifier.

[6] See Hyde (1997) and Beall and Colyvan (2001), for details.

valuationist she is able to deny that there is a (determinate) sharp cut-off between adulthood and non-adulthood. The virtues of this approach are less well known, so let us mention a few of them. First, this approach also preserves all the theorems of classical logic (if, indeed, this is a virtue) in much the same way that supervaluationalism does. In particular, excluded middle and the law of non-contradiction are both theorems.[7]

Indeed, the virtues of the subvaluational approach are much the same as those of the supervaluational approach. This is no accident, since subvaluationalism and supervaluationalism are duals of one another (Hyde 1997). Indeed, given this formal symmetry, there is very little to choose between them. In particular, there is little prospect of separating them on formal grounds.[8] But why, then, is the supervaluational approach considered by almost everyone as highly plausible, yet the subvaluational approach is rarely even discussed? There are, we think, many reasons why philosophers prefer gaps to gluts generally and, in particular, in the case of vagueness. None of these reasons, however, is persuasive. One significant reason for most philosophers preferring a gappy, supervaluational approach to vagueness over a glutty, subvaluational approach is that the question of how best to deal with vagueness is effectively begged against the subvaluational approach in the very definition of vagueness.

3. Borderline Cases

Vagueness is usually defined in terms of borderline cases. A typical definition of a vague predicate is something like:

Definition 1. A predicate is vague iff it permits borderline cases.

But this doesn't help us get a grip on vagueness until we understand what a borderline case is. And for this there are a few

[7] One can also argue that although the subvaluational semantics are non-classical, they are bivalent in the sense that there are only two truth values – the True and the False. What is given up is the classical constraint that every proposition takes one and only one of these two truth values. We won't push this point though because (i) we think it is more natural to think of the case where a proposition is both true and false as a case where the proposition in question is taking a third truth value, (ii) it can also be said that supervaluationalism is bivalent, in the sense that here too there are only two truth values, but some propositions do not take either of these values.

[8] Though there might be other more philosophical grounds. See Beall and Colyvan (2001) and Hyde (2001) for more on this.

definitions on offer. Most of these, however, presuppose some kind of gappiness. For example, it is often claimed that a borderline case is one to which the predicate in question neither applies nor does its complement. Notice that on this account, if *a* is a borderline case of adult, say, then '*a* is an adult' is (plausibly) neither true nor false. And it is not the case that '*a* is an adult' is both true and false. In short, this definition presupposes that vagueness is an essentially gappy phenomenon. Glutty approaches are ruled out by fiat.

Or consider the definition of borderline case as one where the predicate in question neither determinately applies nor determinately does not. Again we see that this introduces gaps – this time in the application of the 'determinately' operator, rather than the vague predicate itself. But again we rule out by fiat the approach of considering a borderline case of a vague predicate as a case where the predicate in question determinately applies and determinately does not apply.[9]

Another account of borderline case defines them in terms of there being no fact of the matter regarding the application of the predicate in question (Sainsbury 1995). It is interesting to note that this style of definition has been objected to by philosophers such as Williamson (1994) and Sorensen (1988) who are sympathetic to the epistemic approach to vagueness. According to the latter account, there *is* a fact of the matter about the application of vague predicates to borderline cases; it's just that we don't know whether they apply or not. Moreover, we can never know whether they apply or not. We're no fans of this epistemic approach, but we agree that it should not be ruled out by the way the problem is set up. So this definition is inadequate for the same sorts of reasons that definitions that imply gaps are unacceptable: they rule out a contender by fiat. Another problem with this definition is that it does not distinguish between a borderline case and a partially-defined predicate. Consider the predicate 'is a detective'. Holmes satisfies this, Moriarty does not and others in the Doyle stories neither satisfy nor do not satisfy. But this has nothing to do with vagueness – it's simply that the domain in question is incomplete. Nothing

[9] See McGee and McLaughlin (1994) for a non-truth-value gap but nonetheless gappy theory, whereby borderline sentences are bivalent but neither determinately true nor determinately false.

on this account distinguishes vague predicates from other incomplete predicates.

We won't go through all the definitions of 'borderline case', but one more is worth considering. It is often said that a borderline case is one where it is not clear whether or not the predicate under consideration applies (Keefe and Smith 1997). This definition seems straightforwardly inadequate because it does not rule out epistemic uncertainty for non-vague predicates. For example, we're uncertain whether the predicate 'is taller than 173 cm' applies to Pelé, simply because we don't know his exact height, but this doesn't mean that the predicate 'is taller than 173 cm' is vague – clearly it is not. But, in this case, someone knows whether Pelé is taller than 173 cm. However, there are many other cases like this where no one knows and yet the predicate in question is still not vague.

But this suggests a more sophisticated version of the borderline-case proposal, whereby we stipulate that all the relevant facts, such as Pele's exact height, are known. Vagueness is then uncertainty about the application of the predicate in question, once all the other epistemic uncertainty is stipulated away – it's the uncertainty that's left over.[10] Such an account might even be construed in such a way as to be neutral between glutty and gappy accounts. For example, we might be able to define the indeterminacy in question to be ambiguous between gaps and gluts.[11] The interpretation as ignorance in the gappy case is plain enough, but how do we make sense of gluts as ignorance? We might think of a glut as a kind of ignorance about the pure cases: true-and-only-true, and false-and-only-false. It is not clear that this will work. After all, it is certainly within the spirit of the paraconsistent proposal to have knowledge in the penumbral region. Indeed, it's anything but ignorance here; knowledge abounds. It is a plausible (and natural) part of this proposal, for example, that we know that a 16-year old is an adult and we know that a16-year old is not an adult. But even if we could make sense of the borderline case indeterminacy as a kind of glutty epistemic ignorance, we would

[10] Greenough (2003) advances such an account and proves that this account is equivalent to an epistemic tolerance account, which we discuss in section 5. The problems we raise for the epistemic tolerance account also apply to the more sophisticated border-line case account under consideration here. In particular, Greenough assumes in his proofs that the space in question has a metric. As we will see in section 5, that is not always the case.

[11] Thanks to a referee for this suggestion.

then have the problem of distinguishing such indeterminacy from other glutty phenomena (such as gluts arising from inconsistent definitions, for instance).[12]

4. Mathematical Induction

Consider again the argument at the beginning of section 2. Note that it is an argument employing mathematical induction that leads from (apparently) true premises to a false conclusion due to the vagueness of the predicate in question. The failure of mathematical induction, thus, seems like a promising way to characterise vagueness:

> **Definition 2.** A predicate is vague iff it is a predicate for which mathematical induction fails.

Of course, we need to spell out what is meant by 'fails' here. There are two alternatives: (i) the particular mathematical induction argument in question is invalid, or (ii) the argument is unsound (due to a false premise). But either way we end up begging the question against some account or other.[13]

Let's suppose we take option (i). This begs the question against many approaches to the sorites (e.g., Williamson's epistemicism, and supervaluationalism, both of which reject one of the premises of the inductive soritical argument). It won't help to claim that we meant (ii) rather than (i), since that would be begging the question against fuzzy approaches, which reject the reasoning employed in sorites arguments – i.e., they reject the validity of mathematical induction when applied to vague predicates.

But what of a disjunctive understanding of 'fails' in definition 2, so that induction fails in the sense that *either* mathematical induction is invalid *or* it's unsound (or perhaps both)? So the epistemicist, as well as the supervaluation and the subvaluation theorists will all agree that a given predicate is vague because the relevant case of mathematical induction is unsound, whereas the fuzzy theorist will say that the predicate is vague because the case of mathematical induction in question is actually invalid. So far so

[12] We are again indebted to a referee for this point.
[13] Thanks to Graham Priest for raising this point.

good. The problem is that some, such as Peter Unger (1979), accept the truth of the premises, the validity of the reasoning, and hence the paradoxical conclusion. This proposal begs the question against Unger. Perhaps we can't please everyone here. But unless a non-question begging definition of vagueness is forthcoming, we will not be in a position to identify the nature of the phenomenon we are trying to accommodate.

There is, however, another, more serious problem with definition 2: as a definition of vagueness it both captures too much and it doesn't capture enough. The first difficulty is that if we define a predicate to be vague just in case it is one for which mathematical induction is either invalid or unsound, this does not uniquely pick out vague predicates. Consider the argument:

(P1) 2 is a prime number.
(P2) For all n, if n is prime, n+1 is also prime.

Therefore:

All natural numbers greater than or equal to 2 are prime.

This is clearly an example of a failed mathematical induction (failed in the sense that the conclusion is clearly false). Moreover, it fails because one of the premises is false (namely, P2), but this would suggest that according to the above definition of 'vagueness', the predicate 'is a prime number' is vague. But this is clearly false. 'Is a prime number' is a paradigmatic sharp predicate. Definition 2 does not isolate vagueness – it captures far too much.

Moreover, definition 2 does not apply to non-numerical vagueness. Examples of non-numerically vague predicates are 'is a religion' and 'is a game'. Such predicates do not have a natural numerical ordering from cases where they apply, through borderline cases, to cases where they do not apply. Yet they clearly admit of borderline cases (e.g., certain ritualistic activities, such as following Brazilian soccer, we take it, qualify as borderline cases of religions). The problem here is that while non-numerically vague predicates admit borderline cases, they do not seem to support mathematical-induction style sorites arguments. Definition 2 just won't do.[14]

[14] Interestingly, the usual definitions of 'borderline case' accommodate the non-numerically vague just as readily as the numerically vague. We will return to the issue of non-numerical vagueness below.

5. Tolerance

There have been a number of recent proposals attempting to provide a definition of 'vagueness' (Eklund 2005, Greenough 2003, Smith 2005, 2008, Weatherson 2010).[15] In this section we discuss one of these accounts (Greenough 2003) and argue that although this account fails to be suitably general, it is on the right track and it helps to motivate our own positive proposal in the next section. Greenough's account attempts to provide a general characterisation of vagueness in terms of a tolerance principle, while remaining neutral with respect to the potential solutions to the sorites.[16]

Tolerance principles tell us that when two cases are close enough there will be no change in truth value.[17] There are different ways of formally spelling out this idea. For example, in the sorites about adulthood we started with, the inductive premise is motivated by a tolerance principle. This provides a means of characterising vagueness: vague predicates are ones that demonstrate a certain tolerance to small changes, and this, in turn, supports the construction of a sorites argument, which exploits the tolerance principle in question. This seems right to us, but care needs to be taken in spelling out the details. In particular, we need to say precisely what a tolerance principle is. For example, for reasons we've already suggested, any tolerance principle that only countenances numerical vagueness will not pass muster.

Even tolerance principles that apply only to discrete cases might be too specific. After all, sorites arguments are more compelling when the increments are small. Indeed, the smaller the increments, the more compelling the sorites: our sorites with adulthood would not be compelling at all if we used 20 year time steps rather than days; the argument would be more compelling

[15] See Eklund 2007 for a survey of some of this recent work.

[16] Smith (2005), for instance, argues against such neutrality being a requirement of a definition of vagueness. Smith's account of vagueness in terms of closeness pushes towards a fuzzy treatment of vagueness. It is interesting to note, however, that despite this bias, his account does lend itself rather naturally to some of the generalization of the sorites that prove to be problematic for other accounts, such as Greenough's (2003).

[17] It is worth noting that tolerance comes in both epistemic and semantic flavours. A semantic version (ala Wright 1975) goes something like this: when two cases are close enough they take the same truth value. An epistemic version (ala Greenough 2003) goes something like this: whenever two cases are close enough, they apparently take the same truth value. We won't pursue the semantic reading any further in this paper. The problems we raise for Greenough's epistemic account also hit the semantic reading.

still had we used seconds rather than days. But suppose time is continuous. Surely, then, the most compelling sorites of the kind under consideration would be a continuous version, rather than any fine-grained discrete one. It is odd that whenever the underlying space is thought to be continuous, the sorites is typically constructed by first stipulating a suitably fine-grained discrete incremental structure.[18] Any account of vagueness in terms of a tolerance principle needs to leave open the possibility, at least, of continuous sorites.

Although Greenough (2003) does not explicitly consider continuous sorites, the tolerance principle he advances is amenable to continuous sorites. His principle does not presuppose that vague predicates come with an incremental structure, such as days, grains of sand, or hairs on heads. He provides both a formal characterisation and an informal characterisation. The latter is: 'there are no close cases in which it is known that a sentence takes a certain truth-state in one case and known that this sentence takes the complementary truth-state in the other close case' (p. 263). This, we think, is very nearly right. The problem is that in the formalisation of this it is assumed that there is only one dimension along which the predicate in question is vague; he has the parameter in question ranging over real numbers.

As it turns out, Greenough's formal account can be altered to accommodate multidimensional vagueness; we just need to specify a metric over the space in question. But what if we cannot specify such a metric? This presents a problem for Greenough that is not so easily fixed, but the basic idea of Greenough's account of vagueness is right. In the next section we say why sorites without an underlying metric structure on the space are problematic. This leads us to propose our own account of vagueness.

6. A Positive Proposal

So far we have no non-question begging definition of 'vagueness' that is broad enough for all cases, although Greenough's account is on the right track. Let's back up a moment, though, and con-

[18] The possibility of continuous sorites was not discussed until very recently. James Chase (to appear) first developed continuous sorites arguments. See Weber and Colyvan (2010) for details.

sider why vagueness matters. The importance of vagueness lies in the fact that it results in paradox.[19] Bearing this in mind, our proposal is to suggest that instead of defining vagueness in terms of borderline case, for instance, the focus should be on sorites arguments. We suggest as a definition:

> **Definition 3.** A predicate is vague just in case it can be employed to generate a sorites argument.[20]

Of course, we now need an independent account of what a *sorites argument* is, but we might do this by simply stating that *it is an argument by degrees with premises that appear to be true, but with a conclusion that appears to be false.*[21] Then we simply list the various diagnoses of what goes wrong (i.e., a false premise, the reasoning is invalid, or the conclusion is, despite appearances, true).

One advantage of this approach is that it doesn't beg any questions against any account of vagueness, since *all* parties in the debate agree that vague predicates are those that can be employed in a sorites argument. It is important to see how this account of vagueness has some advantages over Greenough's account discussed in the last section. Recall that non-numerical vagueness is the vagueness found in predicates such as 'is a religion', where there are borderline cases but no natural numerical ordering between 'is a religion' and 'is not a religion'.[22] Because there is no natural ordering, there is no way to order the various

[19] Of course it is important for other (related) reasons. For instance, vagueness gives rise to a particularly resilient kind of uncertainty that raises problems in various branches of science (e.g., Regan et al. 2002).

[20] This suggestion is already in the literature. For example, Stewart Shapiro (2006) is content to use a definition of vagueness along these lines, as does Sorensen (1985). But we've seen no systematic defence of such an approach and until now it has not been argued that such an account has advantages over other accounts.

[21] With this formulation of a sorites argument, we can rule out failed cases of mathematical induction as not being soritical, given that typically at least one of the premises of the argument doesn't appear to be true. This is the case, for instance, of the argument regarding prime numbers discussed in Section 4 above, in which (P2) is clearly false.

[22] What we are calling 'non-numerical vagueness', some refer to as multidimensional vagueness. The suggestion being that predicates like 'is a religion' are (numerically) vague along a number of dimensions, such as belief in a deity (or deities), worship of the deity (or deities), belief in supernatural powers (usually associated with the deity), ritualistic behavior, and so on. Even if each of these dimensions has a natural numerical ordering, there is no non-trivial way of reducing these multiple numerical scales to a *single* numerical scale. In technical parlance, multi-dimensional vagueness (or non-numerical vagueness) has only a partial ordering, not a total ordering, associated with it.

steps for (the formal version of) Greenough's tolerance principle, yet the predicate in question is vague. We can still construct a recognisably sorites argument.

The usual sorites arguments require a total ordering (typically provided by the natural numbers, but any totally-ordered set will do). The problem here is that with non-numerical vagueness we do not have a total ordering. To return to our example of religion, quite different activities may plausibly be thought to be equally religion like. Consider, for example, two borderlines cases of religion: following Brazilian soccer and following Australian Rules Football Both activities have ritualistic behaviour, belief in entities (the star players) worthy of something akin to worship, belief in extraordinary (if not supernatural) powers of these stars, and so on. It seems that neither of the cases under consideration is more or less religion-like than the other. So, how do we construct an appropriate sorites series when all we have is a partial ordering?

First, we note that although a total ordering is required for mathematical-induction style sorites arguments, the total ordering for sorites arguments is unnecessary – a partial ordering is sufficient. The sorites argument from religion to non-religion, say, must confine itself to activities that are totally ordered in a given path from religion to non-religion, and so typically there will be more than one such argument proceeding via different paths in the partially-ordered space in question. But the resulting non-uniqueness does not matter. All that matters is that there is *at least one* such sorites series available. So consider the following series of activities which (arguable) are totally ordered: Christianity, Buddhism, Brazilian soccer, English Rugby, Minor League Baseball, schoolyard play. Of course, before we could conduct a plausible sorites argument, we would need to fill in a few more activities between each of those above, but the idea, we take it, is clear enough. Unlike the usual sorites arguments from 'tall' to 'not tall', there are multiple routes from 'religion' to 'non-religion', but the fact that there is one such route is enough. So, in the end, the account of vagueness we propose here can accommodate non-numerical vagueness, and we take this as a significant virtue of the proposal.

A potential problem with our proposed definition of 'vagueness' is that we need to be able to recognise sorites arguments when we see them. But this does not strike us as too serious, for surely we *are* able to recognise such arguments when we see them.[23] Moreover, the account of sorites arguments suggested above also helps in recognising these arguments. To recognise a sorites, we should look for an argument by degrees whose premises appear to be true, but whose conclusion appears to be false. There is, of course, some free play here. For instance, what exactly counts as an *argument by degrees*? Rather than a difficulty, we take this to be an advantage of the proposal, since we are leaving this open to both discrete and continuous cases, as well as to totally-ordered and partially-ordered cases. To give some guidance, though, when there is an appropriate metric on the underlying space, Greenough's tolerance principle can be used. When there is no metric, we must resort to good sense to identify arguments by degrees (although these will just be arguments traversing a totally-ordered path through the partially-ordered space in question).

7. Conclusion

All extant accounts make the mistake of either begging questions against some solutions or of failing to capture vagueness in its full generality. For the most part this is excusable because discussions of paraconsistent accounts of vagueness, sorites on partially-ordered spaces, and continuous sorites are all relatively new.

One final issue worth raising is that of the explanatory order: whether vagueness or sorites susceptibility are the more basic (Greenough 2003). Is a predicate sorites susceptible because it is vague or vice versa? We have taken a stand on this, suggesting that sorites susceptibility is the basic notion. If this is seen as a problem – perhaps because it is thought that this issue too should be kept open – then our account can be thought of as a diagnostic test rather than a definition. Our account, thus construed, provides a reason to believe that a given predicate is vague. Sorites susceptibility thus becomes a symptom rather than the fundamental problem.

We, however, are inclined to bite the bullet here and suggest that it is appropriate for a definition of 'vagueness' to take a stand on the issue of explanatory priority. After all, a definition should tell you what the characterising properties are and distinguish these from derived or accidental properties. We may be wrong

[23] If this were not the case, it would be hard to see why vagueness is a problem.

about vagueness being properly characterised in terms of sorites susceptibility – this might be a mere consequence of the real definition of vagueness (whatever that might be) – but we do not think we are wrong to take a stand on the explanatory priority issue. We are not suggesting that vagueness does not give rise to borderline cases or that it does not give rise to a particular resilient kind of ignorance. We are just claiming that these are not the appropriate ways to characterise vagueness. Moreover, we can take some comfort from the failure of direct accounts of vagueness (e.g., those defining it in terms of borderline cases). These failures give us good reason to suppose that vagueness is best understood operationally: by the role it plays in philosophical discourse, and here its main role is in the construction of sorites paradoxes. So our account comes down on the right side on this issue.

So, just what is vagueness? Our present proposal is that vagueness is spelled out in terms of sorites susceptibility, where a sorites argument is an argument by degrees, whose premises appear to be true and whose conclusion appears to be false. This proposal does not rule out by fiat any of the existing proposals for the treatment of vagueness. Our proposal is also an improvement upon the tolerance-principle style accounts such as Greenough's. Our account is more general in that it allows for vagueness in spaces that are only partially ordered and accommodates continuous sorites. Our account opens the way to an understanding of vagueness as a uniform phenomenon, and one that is more general than has thus far been appreciated.[24]

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