The Argument from Vagueness

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Abstract

Universalism is the thesis that composition is unrestricted: for any non-overlapping objects, those objects compose something. One of the most influential arguments for universalism is the argument from vagueness, first advanced by David Lewis and later elaborated and defended by Theodore Sider. I supply a reconstruction of the argument and survey a variety of responses to it.

1. Introduction

Under what conditions do some objects compose something?[1] The intuitive answer to the question is 'sometimes'. When a hammer head and hammer handle are firmly attached to one another, they plausibly compose something, namely, a hammer. Before the handle and head were attached to one another, they plausibly did not compose anything. The universalist answer is 'always': for any non-overlapping objects, those objects compose something. The handle and head compose something even before they come into contact. There is even something composed of your nose and the Eiffel Tower – something partly located in Paris and partly located on your face. Despite such counterintuitive implications, universalism is widely accepted among metaphysicians, and its popularity is in large part due to the argument from vagueness.[2]

The argument from vagueness was first advanced by David Lewis and was later elaborated and defended by Theodore Sider.[3] It runs as follows:

(A1) If universalism is false, then there can be a sorites series for composition.
(A2) Every sorites series for composition must contain either borderline cases of composition or a cut–off with respect to composition.
(A3) There cannot be borderline cases of composition.
(A4) There cannot be cut–offs with respect to composition.[4]
(A5) So universalism is true.

A sorites series for composition is a series of cases running from a case in which composition definitely does not occur to a case in which composition definitely does occur, where adjacent cases are extremely similar in all of the respects that one would typically take to be relevant to whether composition occurs (e.g., the spatial and causal relations among the items in question). Borderline cases of composition are cases in which it is vague whether some things compose anything at all. A cut–off with respect to composition is a pair of adjacent cases in a sorites series for composition such that in one composition does occur and in the other composition does not occur.

For purposes of illustration, consider a continuous series of cases running from the beginning to the end of the assembly of the aforementioned hammer. Assuming (contra universalism) that the handle and head do not compose anything at the beginning of the

assembly process, and that they do compose something at the end, this is a sorites series for composition. There will be points in the assembly process at which the handle and head are just beginning to be fastened together and at which, intuitively, it is vague whether they compose something. I will hereafter refer to these points as 'the intuitive grey area'. For ease of exposition, I will suppose in what follows that the handle and head compose at most one object, that they do not themselves have any proper parts, and that there are no material objects in the universe apart from the handle, the head, and that (if anything) which they compose.[5] Additionally, when I return to this case below, I will suppose that the handle and head are presently arranged in such a way as to be in the intuitive grey area.

In what follows, I examine the reasoning behind the two main premises of the argument from vagueness – A3 to A4 – and various strategies for resisting these premises.[6] Much could be said about each of the strategies. My aim here, however, is only to provide a perspicuous statement of the argument and to present a range of possible responses. I leave it to the reader to decide whether these responses are best viewed as exposing genuine shortcomings of the argument or rather as desperate maneuvers for avoiding its conclusion.

2. The Argument for Premise A3

Premise A3 stands in need of further support. It seems just as clear that there can be borderline cases of composition as that there can be borderline cases of redness and baldness. The argument for A3 runs as follows:

(B1) If there can be borderline cases of composition, then there can be count indeterminacy.
(B2) If there can be count indeterminacy, then some expression in some numerical sentence can be vague.
(B3) No expression in any numerical sentence can be vague.
(A3) So there cannot be borderline cases of composition.[7]

To say that there is count indeterminacy is to say that it is indeterminate how many concrete objects there are. A numerical sentence is a sentence of the following sort which says, for some finite number n, that there are exactly n concrete objects (in this case $n = 2$): '$\exists x \exists y (Cx \,\&\, Cy \,\&\, x \neq y \,\&\, \forall z(Cz \rightarrow (x = z \,\mathrm{v}\, y = z)))$'.

These premises all seem plausible. Borderline composition does seem to give rise to count indeterminacy. If the handle and head are a borderline case of composing something, then it will be indeterminate how many concrete objects there are: two (the handle and the head) or three (the handle, the head, and a hammer). And if it is indeterminate whether there are two or three concrete objects, then the numerical sentence that says that there are exactly two concrete objects must be vague, in which case it must contain some vague expression. But numerical sentences seem not to contain any vague expressions.

3. Resisting Premise B3

All three premises of the argument for A3 can be resisted. Sider's own defense of A3 focuses almost exclusively on challenges to B3. His defense of B3 may be represented as follows:

(C1) No expression in any numerical sentence has multiple admissible precisifications.
(C2) An expression is vague only if it has multiple admissible precisifications.
(C3) So no expression in any numerical sentence is vague.[8]

The precisifications of an expression are candidate meanings for that expression. C1 is independently plausible: every expression in the numerical sentence seems already to have a determinate meaning. C2 is an expression of the natural view that vagueness is always the result of our having failed to associate a unique meaning with a given expression. In what follows, I consider two strategies for resisting C1 – focusing on the concreteness predicate and the quantifiers – and one strategy for resisting C2.[9]

3.1. BORDERLINE CONCRETA

One might resist C1 by maintaining that the concreteness predicate, 'C', has multiple precisifications. Before examining the strategy, it is important to understand the *raison d'être* of the concreteness predicate. If the concreteness predicate were missing from the numerical sentences, then every numerical sentence would be determinately false at every possible world on account of there being infinitely many numbers (sets, propositions, etc.) in every possible world. Consequently, borderline composition could never result in indeterminate numerical sentences, and the argument from vagueness would fail.

To guard against this result, the characterization both of the numerical sentences and of count indeterminacy must incorporate a restriction to those categories of entities that do not have infinitely many members in every world. So 'C' and 'concrete' should be understood as shorthand for 'not a set and not a number and not a proposition and not a state of affairs and…'[10] It is neither here nor there whether the categories on this list determinately fall under the ill-defined philosophical notion of concreteness. All that matters is that no category on the list admits of borderline instances (on pain of falsifying B3) and that no category on the list subsumes ordinary material objects like handles, heads, and hammers (on pain of falsifying B1).[11]

With this in mind, let us see what sort of reasons one might have for taking 'C' to have multiple precisifications. Some philosophers endorse the Barcan formula: $\diamond\exists x\phi \rightarrow \exists x\diamond\phi$. Since it is possible for me to have had a sister, these philosophers must say that there is something which is possibly my sister. Yet since I have no sister, given plausible Kripkean assumptions about origins no actual woman is possibly my sister. Nor could any familiar sort of abstractum (numbers, propositions, etc.) have been my sister. So what exactly is this thing that could have been my sister? Meinongians might say that it is a nonexistent woman; possibilists might say it is a merely possible woman; proxy actualists might say that it is some actual but non-located object (which, although not actually a woman, could have been).[12] Call such things *Barcan objects*, and their defenders *Barcanists*.

Barcanists will presumably take there to be infinitely many Barcan objects. The category of Barcan objects must therefore be incorporated into the characterizations of 'concrete' and 'C', lest all numerical sentences come out trivially false by Barcanist lights. Since it is possible for the handle and head to compose something, Barcanists will say that there is something that they possibly compose. Call it *H*. Barcanists may then say that, in the intuitive grey area, *H* is a borderline case of being a Barcan object. Meinongians may say that *H* is a borderline existent; possibilists, that *H* is a borderline case of being actual; proxy actualists, that *H* is a borderline case of being located.[13] There would then be multiple precisifications of 'C' – some which apply to this borderline Barcan object and others which do not – in which case C1 would be false.

3.2. VAGUE QUANTIFIERS: A LINGUISTIC APPROACH

If indeed it is indeterminate whether the handle and head compose something, it is natural to suppose that it would then be indeterminate what *there is* and whether the handle and head are *everything* that there is. So perhaps it is '∃' and '∀' that are responsible for the vagueness of the numerical sentence. Accordingly, one might deny C1, maintaining that the quantifiers have multiple admissible precisifications and that relevant numerical sentences lack a determinate truth value because they are true on some ways of precisifying the quantifiers and false on others. In particular, one might say that '∃' has both 'liberal' precisifications – that (in some sense) 'range over' a fusion of the handle and head in the intuitive grey area – and 'conservative' precisifications – that do not 'range over' any such fusion – and that the numerical sentence stated above is true on the conservative precisifications and false on the liberal ones. Let $∃_C$ be one such conservative precisification and let $∃_L$ be a liberal precisification.

There is an immediate difficulty in articulating the difference between $∃_L$ and $∃_C$, and, in particular, what it is for the one to be more 'liberal' than the other. Proponents of this line of response cannot say that there exist different domains associated with the different precisifications, D_C and D_L, and that D_L includes more objects than D_C. For if there is something in D_L but not D_C, then D_C does not include everything that there is. But in that case, $∃_C$ cannot be an admissible precisification for '∃': just as any admissible precisification of '∃' must be governed by the introduction and elimination rules associated with the existential quantifier, any admissible precisification of this (unrestricted!) quantifier had better include absolutely everything in its domain.[14] Consequently, the friend of vague quantifiers cannot affirm the existence of different domains associated with the different precisifications. The challenge for proponents of this sort of strategy is to find some way of characterizing the precisifications of the quantifiers which does not commit them to the existence of multiple candidate domains.[15]

3.3. VAGUE QUANTIFIERS: AN ONTIC APPROACH

Some reject the linguistic account of vagueness in favor of an ontic account, on which some sentences lack a classical truth value as a result of vagueness but not as a result of its being indeterminate which propositions they express.[16] Ontic theorists may hold, for instance, that 'Paul is bald' is vague, not because 'bald' has multiple precisifications, but because 'bald' determinately expresses the vague property *baldness*. Similarly, they may deny C2 and maintain that, although '∃' does not have multiple precisifications, it is nevertheless vague as a result of being semantically associated with the vague property *existence*. One difficulty with this line of response is that it seems to require the sort of Meinongian view alluded to above. Vague properties are typically understood to be properties which have borderline instances, and one who wishes to say that there are things that are borderline instances of existence must (on pain of incoherence) be prepared to distinguish between what there is and what exists.[17] Below I will consider an alternative way in which ontic theorists may (and, I think, should) resist the argument from vagueness.

4. Resisting Premise B1

Here again is premise B1: if there can be borderline cases of composition, then there can be count indeterminacy. Notice that the premise does not require that *all* cases of borderline

composition give rise to count indeterminacy, and rightly so since some putative cases of borderline composition plainly would not result in count indeterminacy. Suppose, for instance, that there are one billion things, the Ts, that are definite parts of Tibbles the cat and that exactly one object, A, is a borderline part of Tibbles. It is therefore indeterminate whether the Ts alone compose Tibbles; and if they do not compose Tibbles then plausibly they do not compose anything at all.[18] So the Ts are a borderline case of composing something. But this is not a case of count indeterminacy. There are exactly a billion and two concrete objects: Tibbles, A, and the billion Ts.

The reason that borderline composition does not give rise to count indeterminacy in the Tibbles case is that there is a determinately existing concrete object that the border-line composers are a borderline case of composing (hereafter: a DECO). But borderline composition in assembly cases seems not to involve a DECO. There does not seem to be any determinately existing object that the handle and head are a borderline case of composing, which is why, in contrast to the Tibbles case, it seems indeterminate whether there is something in addition to the borderline composers. So, unlike the Tibbles case, assembly cases seem to exhibit existential indeterminacy – that is, indeterminacy with respect to which things exist – and this is why they threaten to give rise to count indeterminacy.

Suppose, however, that despite appearances there are DECOs in every case of border-line composition, even in assembly cases. Then B1 will be false: borderline composition never gives rise to count indeterminacy. I will examine two sorts of 'DECO maneuvers' for resisting B1.

4.1. ETERNALISM

Suppose that, as some think, past and future objects exist; not everything that exists is present.[19] One who accepts this view may say that there exists a DECO – namely, a future hammer – which the handle and head are (at present) a borderline case of compos-ing.[20] In that case, there are exactly three concrete objects—the handle, the head, and the hammer (which does not exist presently but does exist *simpliciter*)—and, therefore, no count indeterminacy.

This strategy has an obvious shortcoming. If I reach the intuitive grey area and then abort the assembly process, there will be no past, present, or future hammer to serve as the DECO. Yet all that is needed to secure B1 is that there is at least *one* case in which borderline composition gives rise to count indeterminacy. Proponents of this strategy are therefore forced to admit that composition definitely does not occur in the intuitive grey area of aborted assemblies.[21] This is a tough bullet to bite: the suggestion that whether some things are a borderline case of composing something depends on whether they once did or eventually will definitely compose something seems just as unpalatable as the sug-gestion that whether something is a borderline case of being red depends on whether it once was or eventually will definitely be red.

4.2. EXPANSIONS

Let us say that some objects have an *expansion* just in case there is something that is exactly located in the region that is jointly occupied by those objects. Now suppose that, although it is indeterminate whether the handle and the head compose something, there determinately exists an expansion of the handle and the head.[22] This would be an object which is exactly located in the region jointly occupied by the handle and head – and

which, once the assembly process is completed, *will* be composed of the handle and head – but which does not now determinately have them (or anything else) as parts. (In other words, it is now indeterminate whether the expansion of the handle and head is composite or mereologically simple.) Accordingly, this borderline case of composition does not give rise to count indeterminacy, since there are definitely three concrete objects in the intuitive grey area: the handle, the head, and the presently existing expansion that they are a borderline case of composing.[23] A structurally similar strategy is available to super-substantivalists, who maintain that material objects are identical to their locations. The idea here would be to say that the handle and head are identical to the regions of space that they occupy and that the (determinately existing) larger region which has them as its subregions is *itself* a borderline case of being composed of the handle and head.[24]

5. Resisting Premise B2

Premise B2 of the argument against borderline composition may be defended as follows:

(D1) If there can be count indeterminacy, then some numerical sentence can lack a determinate truth value.

(D2) If a numerical sentence lacks a determinate truth value, then it must lack a determinate truth value as a result of vagueness.

(D3) If a sentence lacks a determinate truth value as a result of vagueness, then some expression in that sentence must be vague.

(B2) So, if there can be count indeterminacy, then some expression in some numerical sentence can be vague.

D1 seems plausible: if it is indeterminate whether there are exactly n concrete objects, then the numerical sentence for n must lack a determinate truth value. D2 draws its plausibility from the observation that numerical sentences seem not to be susceptible to other potential sources of indeterminacy (e.g., syntactic ambiguity, reference failure, liar phenomena). D3 is motivated by the thought that vague sentences must 'inherit' their vagueness from one or more of their constituent expressions.

5.1. SORTAL-DEPENDENCY

The quantifiers in the numerical sentence are meant to be unrestricted. Some maintain that quantification is intelligible only when explicitly or tacitly restricted to some sortal or other.[25] They will therefore reject D2: numerical sentences lack a determinate truth value, not as a result of vagueness, but rather as a result of underspecification. Just as the sentence 'Jill is ready' is not truth-evaluable in the absence of some contextually salient activity, numerical sentences are not truth-evaluable unless their quantifiers are tacitly restricted to some sortal or other. But any suitable restriction on the quantifiers is bound to introduce vagueness into the numerical sentences (thus undermining B3).[26,27]

5.2. ONTIC VAGUENESS REVISITED

We have already seen that those who embrace an ontic theory of vagueness may reject C2. Another option for the ontic theorist is to reject D3, by maintaining that the numerical sentence does lack a determinate truth value as a result of vagueness but that none of its constituent expressions is itself the source of the vagueness. Rather, it lacks a determinate

truth value because the proposition that it determinately expresses, namely, that $\exists x \exists y(Cx \,\&$ $Cy \,\& \, x \neq y \,\& \, \forall z(Cz \rightarrow (x = z \,v\, y = z)))$, itself lacks a determinate truth value as a result of vagueness.[28] No particular constituent of this proposition (or of the associated numerical sentence) is single-handedly responsible for the vagueness, just as no particular constituent of the proposition that Kripke is a kangaroo (or of the associated sentence) is single-handedly responsible for its falsity.[29]

One who takes this line is committed to vague existence. But it is worth emphasizing that one is not thereby committed to there being 'vague objects' which do not determinately exist. Proponents of the ontic strategy should resist the inference from its being vague whether the handle and head compose something to there being some (vague) thing such that it is vague whether they compose that thing.[30] (More generally, they should reject the following schema: $\nabla \exists x \phi \rightarrow \exists x \nabla \phi$.[31]) It can be vague what exists without there existing anything such that it is vague whether *it* exists. Accordingly, those who criticize the ontic strategy on account of an alleged commitment to things 'such that it sort of is so, and sort of isn't, that there is any such thing' miss their mark.[32]

6. The Argument for Premise A4

Despite its prima facie plausibility, A4 has been the focus of much of the critical attention in the literature.[33] Sider's defense of A4 may be understood as follows:

(E1) If there can be cut-offs with respect to composition, then there can be brute compositional differences.
(E2) There cannot be brute compositional differences.
(A4) So there cannot be cut-offs with respect to composition.[34]

To say that there are brute compositional differences is to say that there are cases that differ with respect to compositional facts and that there are no other facts about the cases that explain, or ground, their compositional differences.

E1 seems plausible: the sorts of differences that one finds among adjacent cases in a sorites series for composition – for instance, that two atoms are one fraction of a nanometer closer together in the one than in the other – cannot plausibly explain why composition occurs in one but not the other. E2 seems plausible as well: although all explanation must end somewhere, compositional facts seem like a poor candidate for explanatory bedrock. Furthermore, as Sider observes, cut-offs with respect to composition would be 'metaphysically arbitrary.'[35] In characterizing the sort of arbitrariness at issue as 'metaphysical,' he presumably means to distinguish it from the (less pernicious?) sort of linguistic arbitrariness that would be exhibited by cut-offs in a sorites series for baldness. There is nothing arbitrary *per se* about postulating properties with cut-offs in their application conditions, for instance, the property of having 100,000 or fewer hairs. The arbitrariness, rather, would consist in the fact that the term 'bald' picks out a property whose cut-off is at 100,000 hairs rather than a property whose cut-off is at 99,999 hairs.

7. Resisting Premise A4

7.1. GROUNDED CUT-OFFS

E1 draws much of its force from the observation that the factors that intuitively explain why composition occurs when it does (e.g., whether relevant items exhibit a

high degree of unity) seem not to admit of cut-offs. However, one might contend that the factors that *intuitively* explain compositional differences are not the factors that *in fact* explain compositional differences. Suppose, for instance, that one accepts (i) that there cannot be borderline cases of consciousness and (ii) that, necessarily, conscious beings are the only composite objects.[36] In that case, every possible sorites series for composition will contain a cut-off with respect to the presence of consciousness.[37] Facts about the presence or absence of consciousness may then be held to ground compositional differences, in which case those differences would not be brute and E1 would be false.

7.2. BRUTE CUT–OFFS

Alternatively, one might deny E2 and embrace the brutality of compositional differences.[38] Here again the idea is to deny that the factors that intuitively explain compositional differences in fact explain compositional differences. But, in contrast to the previous strategy, one here denies that *anything* explains compositional differences: there are no facts in virtue of which the compositional facts are as they are. Notice that this does not require denying that compositional facts supervene (at least globally) on noncompositional facts. One may accept that cases must differ in some noncompositional respect in order to differ in compositional respects without accepting that any specific noncompositional differences are poised to explain, or ground, compositional differences.[39]

8. Conclusion

Sider remarks that the argument from vagueness is not 'just another Sorites.'[40] Sider remarks that the argument from vagueness is not ''just another Sorites.''[40]   We can see now why that is. We have surveyed a wide range of strategies for blocking the argument from vagueness, each of which required endorsing at least one of the following: the vagueness of logical vocabulary, Barcan objects, eternalism (together with the denial of plausible supervenience principles), borderline-composite expansions, supersubstantivalism, the sortal-dependency of quantification, vague existence, an eliminativism about familiar kinds of composites, or the brutality of compositional facts. None of these commitments is already mandated by the usual epistemic, linguistic, or ontic treatments of vague predicates, vague singular terms, or sorites arguments. I leave it to the reader to determine whether embracing any one of these escape routes is preferable to accepting universalism and its ontology of strange fusions.[41]

Short Biography

Daniel Z. Korman specializes in metaphysics. He is especially interested in the prospects for a metaphysics of material objects that is compatible with our intuitive judgments about which sorts of things there are. His publications have appeared in *Noûs*, *The Journal of Philosophy*, *Philosophical Studies*, and *Oxford Studies in Metaphysics*, and he is a co-editor of *Metaphysics: An Anthology* (with Jaegwon Kim and Ernest Sosa). He holds an M.A. in philosophy from the University of Colorado, Boulder and a Ph.D. in philosophy from the University of Texas, Austin. He is now Assistant Professor of Philosophy at the University of Illinois, Urbana-Champaign.

Notes

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[1] In other words, when are some things the parts of something? This is Peter van Inwagen's (1990) Special Composition Question.

[2] See Markosian (1998, 228–9), Hudson (2001, 107–8) and Korman (2007, 327–9) for discussion of these counter-intuitive implications.

[3] See Lewis (1986, 212–3) and Sider (1997, 214–22; 2001, 120–32); cf. Heller (1990, 47–50). See Sider (2001, 121–2) for an explanation of how his presentation of the argument departs from Lewis's. Sider himself advances this argument as part of a larger argument for a four-dimensionalist theory of persistence. For discussion of the argument from universalism to four-dimensionalism, see Sider (1997, 224–6; 2001, 134–6), Koslicki (2003, 120–2), Gallois (2004, 650–3), Balashov (2005), Correia (2005), Lowe (2005, 107–8), Miller (2005), Varzi (2005, 495–7, 2007), and Kurtsal Steen (forthcoming).

[4] I follow Sider here, though notice that the argument requires only the weaker premise that it is possible for there to be a sorites series for composition in which there are no cut-offs with respect to composition.

[5] The final supposition will be suspended in the discussion of DECOs in §4.

[6] Those who deny that composition ever occurs (e.g., Rosen and Dorr 2002) will reject A1.

[7] Cf. Sider (2001, 127).

[8] Sider (2001, 128–30).

[9] Although a number of philosophers reject the Evans/Salmon argument against vague identity, no one to my knowledge has attempted to resist the argument from vagueness by appeal to the vagueness of the identity predicate. Presumably, this is because borderline composition seems to have little to do with vague identity: even in the intuitive grey area, there definitely is nothing that is a borderline case of being identical to the handle, to the head, or to itself. Those inclined to pin the vagueness of numerical sentences on the identity predicate might consult Hirsch (1999), which supplies a precisificational account of the vagueness of the identity predicate.

[10] Cf. Sider (2001, 127).

[11] Elder (2004, 65) suggests that the burden is on the defender of the argument from vagueness to show that the aforementioned list can be completed without reference to a category that admits of borderline instances.

[12] See Linsky and Zalta (1994) and Bennett (2006) for discussion of proxy actualism.

[13] See van Inwagen (1987, 43–4) and Gallois (2004, 652) on the Meinongian response to the argument from vagueness, Hawley (2002, 138–9) on the possibilist response, and Smith (2005), Hawthorne (2006, 106), and Woodward (forthcoming, §3) on the proxy actualist response.

[14] See Sider (2001, 128–9) and López de Sa (2006).

[15] For further discussion of this strategy, see Hirsch (1999, 149–51; 2002, 65–66; 2008, 376), Sider (2003, 2009), López de Sa (2006), and Liebesman and Eklund (2007).

[16] Sider (2001, 128) concedes that his argument is not directed at those who reject the linguistic account. For discussion of ontic accounts of borderline composition, see van Inwagen (1990, 271–83), Sider (2001, 129), Hawley (2002), Elder (2008), and Woodward (forthcoming). For discussion of epistemicist strategies for blocking the argument from vagueness, see Hudson (2000), Sider (2001, 130–2), and López de Sa (2006, 403). One who opts for an epistemicist strategy will need to find a way to resist A4, but will also presumably reject A3 (given the usual epistemicist gloss on 'borderline' and 'determinate'), perhaps by denying D3 below.

[17] See Hawley (2001, §6) for relevant discussion.

[18] Though see Lewis (1993).

[19] See Sider (2001, chapter 2) for general discussion.

[20] See Baker (2007, 130–2) and Donnelly (2009, 73–4).

[21] Baker (2007, 131) bites the bullet; Donnelly (2009, 74–6) is non-committal.

[22] See Carmichael (forthcoming) and Saucedo (manuscript) for a defense of this sort of DECO maneuver. Their treatments differ in various respects, the most significant being that Saucedo maintains that there is an expansion of the handle and head even at the beginning of the assembly process, while Carmichael maintains that the expansion does not exist prior to the intuitive grey area.

[23] Notice that B1 is false even if 'concrete' is introduced in such a way as to exclude borderline-composite expansions, for in that case there are definitely two concrete objects in the intuitive grey area: the handle and the head.

[24] See Effingham (2009) and Nolan (forthcoming, §6). It may be that supersubstantivalists are better understood as rejecting B3 by maintaining that the locations in question are borderline concreta, but this is largely just a matter of bookkeeping.

[25] See Lowe (1989, 10) and Thomasson (2007, chapter 6) for discussion.

[26] It may be possible to fortify the argument from vagueness against this line of response. The key would be to find some non-vague sortal 'S', such that proponents of sortal-dependency will agree that it can be indeterminate whether there are any Ss, even when there is no DECO which is a borderline case of being an S.

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