

Vagueness and Reality

Michael Tye
Temple University

Philosophers have been puzzled by the phenomenon of vagueness for a very long time. It seems clear that there can be vague ways of talking, vague ways of thinking, vague categorization schemes. But does it make sense to suppose that there are vague objects in the external world which are indeterminate in themselves quite independently of language or thought? Most philosophers have thought not. For example,

Russell (1923): Apart from representation, . . . there can be no such thing as vagueness . . .

Dummett (1975): The notion that things might actually *be* vague, as well as being vaguely described, is not properly intelligible.

Lewis (1986): The only intelligible account of vagueness locates it in our thought and language.

On the face of it, this view is a very strange one. For common sense has it that the world contains clouds, mountains, deserts, and islands, for example, and these items certainly do not seem to be perfectly precise. Moreover, on the face of it, the imprecision of these items does not derive solely from the ways in which we think or speak about them any more than their existence does. We did not create Mount Everest by thinking or speaking about it; and intuitively neither did our thought or speech make its boundaries vague.

Those who reject the thesis that the world is vague typically insist that *really* things like mountains, deserts, etc., don't exist. So, *really*, there are no things with fuzzy borders. As Lewis puts it:

The reason why it's vague where the outback begins is not that there's this thing, the outback, with imprecise borders; rather there are many things, with different borders, and nobody has been fool enough to try to enforce a choice of one of them as the official referent of the word 'outback'" (1986: 212).

On this view, there are lots of minimally differing precise aggregates of land molecules out there. When we use a term like 'the outback', there are many equally eligible candidates among these aggregates for the referent of the term. The aggregates themselves have a precise structure. What is vague is simply *which* aggregate the term picks out. And this vagueness, in turn, derives from the term's meaning. Vagueness is thus a semantic phenomenon.

Again this is not, I think, the intuitive view of the matter. Intuitively, there is no vagueness or indeterminacy in which entity, 'Everest', for example, denotes. It denotes a single mountain in the Himalayas, a bloody great mountain, indeed, the highest mountain in the world. The indeterminacy resides in its referent. The referent is vague. There is no line that sharply divides the matter composing Everest from the matter outside it. Everest's boundaries are fuzzy (Tye 1990). Many molecules are definitely inside Everest; and many are definitely outside. But some have an indefinite status: there is no objective, determinate fact of the matter about whether they are inside or outside. Notwithstanding its vagueness, Everest itself certainly exists, however. It was discovered. It can be photographed. People climb it regularly. People have died on it.

Lewis adopts the counterintuitive position that there are no things with vague boundaries in large part because he is persuaded by Peter Unger's *Problem of the Many* (1979), which he takes to generalize from Unger's case of a cloud to all the manifest objects of common sense. He comments:

Once noticed, we can see that [the Problem of the Many] is everywhere, for all things are swarms of particles. There are always outlying particles, questionably parts of the thing, not definitely included and not definitely not included. So there are always many aggregates, differing by a little bit here and a little bit there, with equal claim to be the thing.

We have many things or we have none, but anyway not the one thing we thought we had. That is absurd. (1993)

I find this line of argument unconvincing, and I have offered criticisms of it elsewhere (Tye 1996). In the present context, my interest is not directly in this disagreement between Lewis and myself, but rather in the more basic issue of whether the position I accept—that there are common or garden objects with fuzzy boundaries—is really at odds with the *general* view, endorsed by Russell, Dummett, and Lewis, that there is no coherent thesis of *ontic* vagueness. What I try to show, in this essay, is that my position, while not yet one that is automatically committed to ontic vagueness, may

easily be elaborated further into a full-fledged ontic vagueness thesis. In the course of developing my proposal, I respond to a recent charge by Mark Sainsbury (1995) that the idea of ontic vagueness is unintelligible. I also discuss the proposal that ontic vagueness requires objects with vague identities.

I

Let me begin with the following claim:

(T1) There are objects with fuzzy boundaries.

One obvious reason that (T1) is not yet a thesis of ontic vagueness is that (T1) is compatible with the view of epistemic theorists (Sorenson 1988, Williamson 1994) that vagueness is a matter of ignorance. On this view, the fuzziness of Everest's boundaries is a reflection of the fact that we do not know exactly where the boundaries lie. Our conceptual mechanisms are simply not equipped to make the necessary fine-grained discriminations. Epistemic theorists thus grant that some molecules are neither definitely inside nor definitely outside Everest, but they insist that this is only in the sense that some molecules are not known to be inside and not known to be outside either. Stronger versions of the epistemic view hold not merely that the dividing line is not known but also that it cannot be known.

Again, this seems very counterintuitive. Our ordinary concept of a fuzzy boundary is one of a boundary that is *non-epistemically* fuzzy. Intuitively, not even God knows where Everest's boundaries lie any more than God knows which hair, the addition of which turns a man who is bald into one who is not. To be sure, there is a sense of the operator 'definitely' that is epistemic—as, for example, when I say, upon hearing of a photo-finish in a hundred meter race, "It's not definite yet whether NN won," meaning that it isn't publicly known yet whether NN nudged out the other runners for the victory. But there is also a non-epistemic sense of 'definitely', as when 'Definitely *p*' is correctly inferred from 'It is a fact that *p*'. In having epistemic and metaphysical senses, the operator 'definitely' is like the operator 'possibly'. And intuitively it is the metaphysical sense that is relevant to the claim that there are objects such that it is indefinite just where their boundaries lie.

To get closer to a genuine thesis of ontic vagueness, then, we should revise (T1) to

(T2) There are objects having non-epistemically fuzzy boundaries.

This thesis, as illustrated by the examples of mountains, clouds, deserts, etc., is, I suggest, grounded in a thesis of non-epistemic, compositional vagueness.

Everest is constituted by a very large number of land molecules. The reason why Everest's boundaries are vague is that it is indefinite just which molecules are parts of Everest. Letting ' ∇ ' abbreviate 'indefinitely' in its non-epistemic sense, and ' $\lambda y(Fy)x$ ' be a predicate abbreviating ' x has the property of being a y such that y is F ', we can now formulate a more promising statement of the thesis of ontic vagueness as follows:

(T3) There is at least one object, x , that satisfies $\lambda y \exists z(\nabla(y \text{ is a part of } z))x$.

Mark Sainsbury (1995) argues that (T3) is unsatisfactory, however. In his view, (T3) is consistent with the position that all vagueness lies in representations—a position that Sainsbury calls "representationalism"—and thus it is not a hypothesis that opponents of ontic vagueness need contest. He says:

The representationalist recognizes that every property of representations induces a property of nonlinguistic things: for every linguistic property, an ontic one. Corresponding to the linguistic property of being vague, there is the ontic property of being a satisfier of a vague linguistic thing. . . . (1995: 66)

If 'part of' is vague, the representationalist can . . . believe that there are compositionally vague objects. They are objects which, relative to some object, are borderline for 'part of'. Being thus borderline is an ontic property, in that it applies to nonlinguistic things, but it is not itself the property of being vague, and its holding of an object is explained by vagueness in representations. (1995: 68)

Sainsbury continues:

Here is an analogy. Coherence is a property of, and only of, representations (and sets thereof). This does not prevent us defining what it is for an object to be 'coherent': to be a satisfier of none but coherent representations. Does this mean that the property of coherence is ontic after all? No, for the property labeled 'coherence' is not the same property as the property of representations in terms of which it was defined: and an object's possession of the ontic property is explained in terms of coherence in representations. (1995: 68)

Sainsbury agrees with me, then, that there are compositionally vague objects, and hence he has no truck with (T3) as such. In his view, there are indeed nonlinguistic things that have the property of being a satisfier of $\lambda y \exists z(\nabla(z \text{ is a part of } y))x$. But, according to Sainsbury, the fact that this property holds of any given thing is to be explained by vagueness in representations, in particular, by vagueness in the term 'part of'. (T3), therefore, does not express a thesis of ontic vagueness.

Sainsbury's argument seems to me unpersuasive. Consider first the coherence example. Reflection upon the concept of a coherent representation allows us to see that a representation that is not coherent cannot be cor-

rectly applied to anything. It is thus a conceptual truth that an incoherent representation can have no satisfiers. This conceptual truth conceptually entails that every object satisfies only representations that are *not* incoherent, that is, none but coherent representations. Why, then, does the ontic property of 'coherence' hold of any given object? Answer: Because it could not fail to do so. The concept of a coherent representation conceptually guarantees that every object possesses 'coherence'. It is in this way that possession of the ontic property is explained via coherence in representations.

Unfortunately for Sainsbury's argument, the same is not true in the case of vagueness. Reflection on the meaning of term 'part of' tells us that the term *could* have borderline satisfiers. Now take some object with vague boundaries, Everest, say. That Everest has the property of being a satisfier of $\lambda y \exists z (\forall (z \text{ is a part of } y))x$ —is not entailed by this truth about the meaning of 'part of'. And the same goes for any other compositionally vague object. Thus, the analogy with the coherence example fails. We cannot explain the fact that Everest is compositionally vague—that it is a satisfier of $\lambda y \exists z (\forall (z \text{ is a part of } y))x$, simply by noting that 'part of' is vague. That there are vague objects, if there are any objects at all, is not entailed by the claim that 'part of' is vague. In some possible worlds, 'part of' is vague and there are no vague objects.

A second problem with Sainsbury's argument is that it assumes that 'part of' is vague. What justifies such an assumption? Sainsbury comments:

My justification is that, first, the predicate meets the conventional sufficient conditions for vagueness in terms of the possibility of borderline cases and, second, that the applicability of the predicate to a material thing is based in part on matters of degree, for example, the strength of cohesive forces. (1995: 68)

Again, this seems to me unpersuasive. Suppose you have two perfectly precise objects. There is no indeterminacy in where their boundaries lie. Then might it still be indeterminate whether one is a part of the other? Surely not. In any case where there is such indeterminacy, there is indeterminacy in boundaries, in where one or the other object ends. So, 'part of' can have borderline cases *only if* its relata are compositionally vague objects. In this respect, 'part of' is quite unlike such vague terms as 'large', 'red', and 'tall', for example. They admit of possible borderline cases, whether or not their possessors are vague objects. Why, then, insist that 'part of' is *itself* vague? Why not take the view that 'part of' is precise and that the vagueness resides not in the term but in some of the things to which it applies? Take away *their* vagueness and no vagueness remains.

Here is an example that offers support for this view. Consider the predicate 'is exactly six feet in length'. Intuitively, this predicate is sharp. But intuitively, it has a possible borderline case, namely, a material thing which

is such that it is indefinite whether it is exactly six feet in length. Having a possible borderline case, then, contrary to what Sainsbury and many others suppose, is not a sufficient condition for a predicate's being vague. So long as the predicate does not have a meaning that precludes its being satisfied by precise objects, what is needed, I suggest, for a necessary *and* sufficient condition is the possibility of a borderline case involving precise objects (a single precise object for a monadic predicate, a pair of such objects for a dyadic one, and so on).¹ This restricted proposal seems to me intuitively plausible. It entails, for example, that 'is exactly six feet in length' is not vague, just as we intuitively suppose. In the case of 'part of', the proposal also yields a definite result, since 'part of' evidently does not have a meaning that precludes its being satisfied by precise objects. What the proposal tells us is that 'part of' is not vague; for there can be no precise objects which are such that it is indefinite whether one is a part of the other.

Here is a further argument for the same conclusion. On one standard conception of the part-of relation, it is a necessary truth that every object is a part of itself. If this is so, then there cannot be an object such that it is indeterminate whether it is a part of itself, even if some objects, actual or possible, are vague. Where a relational term is vague, it has possible borderline cases in which a single object is related to itself—provided that the term's meaning permits it to have non-borderline cases of application of this sort. Consider, for example, 'loves', 'amuses', 'hits', 'tires'. It follows again that 'part of' is not vague.

Admittedly, the principle just stated for vague relational terms is not self-evident.² But it seems to me plausible. For if a relational term is vague, and its meaning permits it to apply to 'pairs' of identical objects, then its vagueness should allow the possibility of borderline cases for some such 'pairs'. If there can't be any cases of this sort, then intuitively, I suggest, the term is precise.

As for Sainsbury's point about the applicability of 'part of' to a material thing being based upon bonding strength and other matters of degree, we can certainly agree with it. But all it establishes is that in some cases, whether one thing is a part of another is indeterminate. And that, for the reasons already cited, does not show that 'part of' is vague.

We are now in a position to take up another, very different objection to (T3) as a thesis of ontic vagueness. (T3) says that there are vague objects so long as there is at least one object, x , that satisfies $\lambda y \exists z (\nabla (z \text{ is a part of } y))x$. The assumption or presupposition is thus that what it is for an object to be vague is for it to satisfy $\lambda y \exists z (\nabla (z \text{ is a part of } y))x$. The objection is that a precise object might satisfy this predicate in virtue of there being some other vague object which is such that it is indeterminate whether it (the vague object) is part of the precise one. So, (T3) has not managed to capture what it is for an object to be vague.

My reply is to maintain that while a precise object can have vague objects among its parts, it cannot be indeterminate whether any given vague object is a part. To see this, suppose that p is a precise object, so that p has sharp boundaries. Then p does not have a vague composition: there is *no* object, be it precise or vague, which is such that it is indeterminate whether it is a part of p . So, a precise object cannot satisfy $\lambda y \exists z (\nabla(z \text{ is a part of } y))x$.

(T3), then, is my proposed articulation of the thesis of ontic vagueness. An alternative but closely related way of stating the thesis is via the thought that any vague object is one that is capable of being made more precise. Everest, for example, can be made more precise by sharpening its boundaries somewhat, by *diminishing* the fuzziness of its borders. This leads to the proposal that there are vague objects if and only if there are objects that are capable of being made more precise. And this proposal, in turn, becomes a thesis of ontic vagueness so long as it is held that there are objects that are capable of being made more precise if and only if the conditions specified in (T3) obtain.

Have I now done enough to make intelligible the supposed “dark thought” that the world itself might be vague? I believe so. The hypothesis that there are or might be objects with fuzzy boundaries, objects that are capable of being made more precise, seems to me easy to grasp in the context of concrete, ordinary examples such as that of Everest. This hypothesis yields a thesis of ontic vagueness once it is coupled with the further claim that there are objects of this sort if and only if there are objects that satisfy $\lambda y \exists z (\nabla(z \text{ is a part of } y))x$.

It may seem that there is another way of elaborating the idea that the world is vague, independently of language or thought, a way that nonetheless connects directly with the hypothesis that there are objects that are capable of being made more precise. Suppose that there are objects whose identity is indeterminate. Then there are objects whose identity can be sharpened, objects thus that are capable of being made more precise identity-wise. The suggestion that ontic vagueness is a matter of the existence of objects with vague identities is, of course, well known. But it is not, I think, ultimately defensible. This is the topic of the next section.

II

It is sometimes held that the thesis of ontic vagueness requires that identity be vague. Since there is a powerful argument due to Gareth Evans (1978) that is supposed to show that identity is not vague, the conclusion some philosophers have drawn is that there is no ontic vagueness or else that the thesis has no clear sense. I begin with a discussion of Evans’s argument.

Assume that there are vague objects. Then, according to Evans, some identity statements must be vague. Suppose that '*a*' and '*b*' are singular terms and that '*a* = *b*' is one of these vague identity statements so that '*a* = *b*' is indefinite in truth-value. Then we have:

$$(1) \nabla(a = b).$$

Thesis (1) ascribes to *b* the property of being indefinitely identical with *a*. This property may be expressed formally via the predicate ' $\lambda x (\nabla(x = a))y$ ', where this abbreviates 'y has the property of being an *x* such that it is indefinite whether *x* is identical with *a*'. So,

$$(2) \lambda x (\nabla(x = a)) b$$

is also true. Now surely we have

$$(3) \neg \nabla(a = a)$$

and hence

$$(4) \neg \lambda x (\nabla(x = a)) a.$$

By the principle that if object *x* and *y* differ in a property then they are not identical (the contrapositive of Leibniz's law, which states that if *x* and *y* are identical then they share all the same properties), from (2) and (4),

$$(5) \neg(a = b)$$

follows. And (5), according to Evans, to whom we owe the argument, contradicts the initial assumption that ' $\nabla(a = b)$ ' is true.

This argument has provoked extensive discussion. Let us grant for the moment that (1) is true. Does (2) follow from (1)? Some have thought not. David Lewis (1988), for example, compares this step in Evans's argument to supposing that from

$$(6) \text{ It is contingent whether the number of planets is 9,}$$

it is legitimate to infer

$$(7) \text{ The number of planets is such that it is contingent whether it is 9.}$$

Since (7) evidently does not follow from (6), neither does (2) follow from (1), on the assumption that the operator 'indefinitely' or 'it is indeterminate whether' is analogous to the modal operator 'it is contingent whether'.

Let us suppose that as a counterpart to the notion of a rigid designator, we have the notion of a precise designator. Then, Lewis's point can be put this way. Just as the inference from (6) to (7) goes wrong because 'the number of planets' is non-rigid, so too, the inference from (1) to (2) is fallacious because '*a*' is imprecise or vague.

This reasoning is unconvincing. To begin with, we can all agree that some designators are vague. Suppose, for example, that it is indeterminate

whether Jane S. or Mary W. is more beautiful than any other American woman. By some widely accepted criteria of beauty, Jane S. wins; under other widely accepted criteria Mary W. is the winner. Then 'the most beautiful U.S. woman' has no single determinate referent. So, we can all agree with Lewis that the inference from (1) to (2) is fallacious, if 'a' is a vague designator, that is, a designator which is such that it is indeterminate which object it picks out. But what if 'a' is a precise designator? Lewis assumes that there are no precise designators *that designate vague objects* (that is, designators which are such that it is determinate which vague objects they pick out). For he holds that there are no vague objects (witness his comments earlier on 'the outback').

I take the opposing view. For example, as noted earlier, I hold that 'Everest' is a precise designator *in the above sense* which picks out a vague object. So, Lewis has not shown that there is anything wrong with the inference from (1) to (2), if the designators are precise. Moreover, it certainly seems reasonable to suppose that Evans intended that 'a' and 'b' be taken to be precise designators for vague objects, although he did not actually say this. After all, his target is the philosopher who believes that the world itself is vague, not the philosopher who believes that vagueness resides in how language latches on to the world.

It is perhaps worth adding that there are other responses to the Argument from Identity, as I shall sometimes call it, which are similar to Lewis's. Richmond Thomason (1982), for example, focuses upon the step from (3) to (4). He notes that in the modal case

(8) It is contingent whether $a = a$

is equivalent to

(9) $\lambda x(\text{it is contingent whether } x = a) a,$

only if 'a' is rigid. Likewise, he claims, (3) is equivalent to (4), only if 'a' is a precise designator. So, when Evans infers (4) from (3), according to Thomason, "he is assuming what he is trying to prove."

Not so. Supposing that 'a' and 'b' are precise designators does not involve supposing thereby that their referents, a and b , are precise. So, Evans is not begging the question.

There is another way in which the defender of vague objects might respond to the inferences from (1) to (2) and from (3) to (4). It could be suggested that even though there are vague objects, there really are no such properties as the properties ascribed in (2) and (4). This strategy, however, does not really help. For although it is customary to state Leibniz's law with reference to properties, this is not strictly necessary. A nominalist, for example, might restate the law, without distorting its intuitive core, so that it asserts that any objects x and y are identical only if they satisfy all the same

predicates. Given corresponding restatements of (2) and (4), the original challenge to Evans's argument now collapses.

Another possible line of reply to the argument is to attack the unrestricted applicability of Leibniz's law, and with it the inference from (2) and (4) to (5). This seems ad hoc, however. For what could be more obvious than that if objects are identical then they have all the same properties? A more interesting response is to accept Leibniz's law but to argue that (2) and (4) do not require for their truth that *b* have a property *a* lacks. This response is offered by Jack Copeland (1995). He says:

[T]he statement that *a* has the property of being determinately identical to *a* ascribes the same property to *a* as the statement that *a* has the property of being determinately identical to itself. It is not as though there are two different properties that *a* has, the property of being determinately self-identical and the property of being determinately identical to *a*. But *b*, of course, also has the property of being determinately self-identical. So, (4') [$\lambda x (\Delta(x = a))a$, where ' Δ ' abbreviates 'definitely']³ does not attribute to *a* any property that *b* lacks. . . .

The situation is the same in the case of (2) and (4). (4) states that *a* does not have a certain property; and indeed *b* does not have this property either. To hold that (2) and (4) are both true is not to say that *b* has a property which *a* lacks. (1995: 88)

Prima facie, this is implausible. Consider the property of loving oneself, a property possessed by all narcissists and, let us suppose, by Paul in particular. Jane also loves Paul. So, Jane has the property of loving Paul. But the property of loving oneself is not the same as the property of loving Paul. If it were, then Jane, in loving Paul, would love herself; further, all narcissists would love Paul. But many do not; indeed, many have not even heard of Paul. Moreover, the property of loving oneself has instances in possible worlds in which Paul does not even exist. So, there are two different properties here. Likewise, I suggest, in the case of the property of being determinately self-identical and being determinately identical with *a*. No good reason has been given for denying that, if (2) and (4) are both true, *b* has a property which *a* lacks.

A still further reply to Evans's argument is that the conclusion (5) doesn't contradict the initial assumption (1). The obvious counter-reply to this is that since (5) has been established in the course of a proof, it is permissible to infer

$$(10) \Delta \neg(a = b).$$

just as once *P* is established in a proof, $\Box P$ may be inferred on any later line. Since (1) is equivalent to

$$(1a) \neg\Delta(a = b) \ \& \ \neg\Delta\neg(a = b).$$

from (1),

$$(11) \neg\Delta\neg(a = b)$$

follows. And (11) formally contradicts (10).

It must be admitted that within a framework of fuzzy logic of the sort proposed by Zadeh (1975), with an infinity of truth-values in the range 0 to 1, the inference from (5) to (10) is invalid, even given that this occurs in the context of a proof of (5). For if the value of $\nabla(a = b)$ is equal to 1, the value of $\neg(a = b)$ is less than 1 but greater than 0 and thus the value of $\Delta\neg(a = b)$ is equal to 0. Since the derived formula, (10), has a lower value than the formula, (5), from which it is derived, the inference is invalid.⁴

To offer this reply, however, is already to adopt a framework within which the inference from (1) and (3) to (5) fails to go through. For, as just noted, within fuzzy logic, where $\nabla(a = b)$ takes the value 1, the value of $\neg(a = b)$ is less than 1. But, given the very strong, intuitive plausibility of the reasoning from (1) and (3) to (5), once it is properly elucidated, the natural conclusion to draw is that any fuzzy logic that classifies the reasoning as invalid is unsatisfactory.

Perhaps it will now be charged that Evans's supposed proof has some very counterintuitive results and for this reason is suspect. Consider, for example, the identity statement

$$(12) \text{Princeton} = \text{Princeton Borough.}$$

According to David Lewis, (12) is vague or indefinite, since "it is unsettled whether the name 'Princeton' denotes just the Borough, the Borough plus the surrounding Township, or one of countless larger regions" (1988: 128). Does not this fly in the face of Evans's proof? No, it does not. As Lewis understands the term 'Princeton', it is not a precise designator: there is no single object that it determinately denotes. Nothing in Evans's proof is incompatible with there being indeterminate identity statements in which vague designators figure.

Here is a second possible problem case for Evans's proof based on some remarks of Derek Parfit, and cited with approval by both John Broome (1984) and Brian Garrett (1991a). There is a club—called 'Black's', let us suppose—which is created at some time t and thereafter has a clubhouse, a membership list, and a set of rules. Black's is never formally disbanded, but through time its members meet more and more infrequently and the clubhouse becomes run down. There are no meetings for several years. Twelve years later, however, a few of the original members get together with some new people and start to meet once more in the same building (now redecorated). The club they belong to at this later date, $t'(t + 12)$, has the same name as Black's. In what follows, to avoid confusion, let us capitalize the name for the club at t' .

On Parfit's view, the statement

(13) Black's = BLACK'S

is indefinite. Moreover, the indefiniteness, we are told, is not an epistemic matter, since there is no further information which would settle the matter one way or the other.

If the old members of Black's who meet again at t' intend to create a new club by their later meeting, then the most plausible view is that Black's and BLACK'S have radically different origins: Black's began at t , BLACK'S at t' . So, the clubs are not identical and (13) is false. If the old members intend at t' to be resurrecting the old club, then, given the other facts—the same name, the same place, some of the same members—the natural view is that BLACK'S is the same club as Black's. The old club was merely disbanded for a while. Under this scenario, (13) is true.

What if the people meeting at t' have no relevant intentions with respect to the relationship of the old club to the new one? Then the situation is such that the name 'BLACK'S' does not pick out a single club with a single origin. For it is now left open not only whether 'BLACK'S' picks out something that began when they started meeting again but also whether it picks out something that began twelve years earlier. *That* much indeterminacy in origin means that no club has been individuated by uses of 'BLACK'S'. This is not to say that clubs must have sharp origins, but rather that there are limits on the indeterminacy of their origins, limits consonant with their admittedly vague persistence conditions. Since the origin of a club, like that of a clock or a human being, is essential to its identity, the case now is one in which no club has been singled out. There are radically different, equally good answers to the question "What is the origin of the club called 'BLACK'S'?" So, there is no one club that the name 'BLACK'S' definitely designates.⁵

Thus, the case does not exhibit any vagueness in *identity*. The vagueness, on the last interpretation, pertains to what a certain name denotes.⁶ (13), on this interpretation, is indeed indefinite, but its indefiniteness does not undermine or threaten Evans's proof.⁷ One can, of course, *stipulate* that the name 'BLACK'S' definitely denotes a club-stage, say, if one prefers. But then (13) again is straightforwardly false. Even if BLACK'S is a club stage, Black's is not.

The third and final example I want to consider is due to Garrett (1991b). Suppose a ship, *A*, created at time *T*, is composed of 100 planks. Here is what Garrett says:

Case 1 At time *t*, one plank is removed from *A*, and quickly replaced with another plank. Call this ship at *t*, thus altered, '*B*'. It seems uncontroversial—in the absence of any other changes—that it's *true* that *A* is identical with *B*.

Case 2

...
...
...

Case 99

Case 100 At t , all A 's planks are removed and then replaced with a new set. As before, call the ship at t , ' B '. Since there is complete discontinuity between A and B in Case 100, it seems uncontroversial that it's *false* that A is B . Consider Case 50. In this case, half of A 's planks are removed and replaced. It is plausible to suppose that it is *indeterminate* whether A is the same ship as B This description of Case 50 rests on more than just an appeal to intuition. If you refuse to accept this description, but accept the above descriptions of Cases 1 and 100, you are committed to the existence of a sharp cut-off point in the spectrum from 1 to 100. . . . This commitment is very implausible. How could the replacement of just *one* plank make such a difference? (1991b: 342–43)

I agree with Garrett that there is some plausibility to the claim that, in Case 50, it is indeterminate whether A is the same ship as B . But this does not show that identity is vague nor does it threaten Evans's proof, the Argument from Identity. Consider Case 1. What is the origin of the entity, if any, denoted by the term ' B ' in this case? ' B ' is introduced as naming *this* ship. Which ship? In this case, it is clear: the ship that originally had one different plank, the ship that was built at time T . Here, the demonstrative 'this ship' singles out a particular ship, namely A . In case 50, the situation is different. Whether the name ' B ' is being introduced to name the original ship or a different one with an origin at the time of the replacement of old planks with new ones is radically unclear. Here the demonstrative 'this ship' does not succeed in picking out a single ship. And it does not do so because there is nothing in the demonstration that determines an origin within the bounds of the vagueness of composition appropriate to ships. Thus, in Case 50, it is vague whether 'this ship' picks out the original ship or a different ship with fifty new planks. This vagueness carries over to the name introduced via the supposedly reference-fixing demonstrative. The term ' B ', therefore, in case 50 is a vague designator, not a precise one, as it is in case 1.⁸ However, the existence of indefinite identity statements with imprecise designators is not to the point, as far as Evans's argument goes.

I conclude that Evans's proof stands. But what exactly does it prove? Since it shows that there can be no true statements of the same type as (1), where the component designators are precise designators for vague objects, it proves that there cannot be satisfiers for $\lambda w \lambda z (\forall (w \text{ is identical to } z)) x, y$.⁹ Further, since the argument extends straightforwardly to the case of precise designators for precise objects, it proves that the identity relation is sharp.¹⁰

Evans, however, does *not* prove that there is no ontic vagueness; for such vagueness is consistent with the sharpness of identity. The way to

make sense of the thesis of ontic vagueness is in terms of objects with ontically vague boundaries, objects that are capable of being made more precise. The world is full of such objects, in my view. Vagueness lies in representations, to be sure. But it also lies in the world. And the latter vagueness is not explicable in terms of the former.

NOTES

An earlier version of this paper was read at a colloquium at King's College, London. I would like to thank Keith Hossack, Mark Sainsbury, and Gabriel Segal for helpful comments.

1. The restriction is needed to disqualify cases such as that of the intuitively vague predicate 'is an extremely fuzzy and large cloud', which conceptually requires that all its borderline cases have fuzzy boundaries. I owe this example to Tim Williamson.
2. It entails, for example, that the term 'is identical with' is precise, since it is determinately true that everything is identical with itself. But that, I think, is a perfectly reasonable consequence. For a discussion of identity, see Section II below.
3. Material in brackets added.
4. Cf. Copeland 1995: 87.
5. What I say here is similar to, and influenced by, what Sainsbury says (1995: 74–75) about the identity 'That watch is the watch I sent for repair'. On this point he and I are in agreement.
6. Likewise, of course, for the description 'the club meeting at t' and later'.
7. In my 1996 article, I took the view that (13) is false, even in the case in which the new members have no relevant intentions. I now think that the argument I gave there for this conclusion is flawed.
8. In which case does ' B ' change from being a precise designator of the original ship to a vague designator? It's vague. There is no determinate point in the sequence of possible cases at which the transition occurs. For more on such transitions, see Tye 1990, Tye 1994.
9. Consider this objection, which I owe to Keith Hossack. There is a cloud in the sky. If there are vague objects, then this cloud is one of them. Call it 'Fred' (so that 'Fred' is a precise designator for a vague object). Water droplets in Fred's vicinity are made to disappear, one by one. At the end of the process, Fred no longer exists. Intuitively, there is a time, somewhere in the middle of the removal process, at which it is indeterminate whether Fred exists. But this demands that it be indeterminate whether Fred is identical with one of the things that exist. And that contradicts my claim that there are no indefinite identity statements with precise designators for vague objects.

My response to this line of reasoning is to say that it involves a non-sequitur. Existence *at time t* is a property (expressible in the predicate ' x exists at t ') and it does indeed admit of borderline cases, as correlatively does identity *at time t* . But it does not follow from this that (tenseless) existence or identity *simpliciter* admit of such cases. Given that there is a time *at* which it is indeterminate whether Fred still exists, it is also indeterminate whether Fred is identical *at that time* with one of the things existing *then*. But there is no indeterminacy in whether Fred (tenselessly) exists; after all, there is (in the tenseless sense) an object that 'Fred' denotes, namely, Fred. So, there is no indeterminacy either in whether Fred is identical with one of the things that (tenselessly) exist.

10. Moreover, as I observed in n. 2 above, the principle stated in section I for vague relational terms entails that identity is sharp.

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