

**Vague Existence Implies Vague Identity**

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**Abstract:** I take issue with the claim that one can accept *de re* vague existence without *de re* vague identity. Whether we should endorse both is not my main concern here. My thesis is that one can't have vague existence without vague identity. Thus I will show that far more philosophers are implicitly committed by their acceptance of vague existence to vague identity than explicitly so committed. But if vague identity is impossible, philosophers should reject vague existence as well. And a surprising consequence is that if there is no vague identity, then the charge of arbitrariness leveled against epistemicism becomes less weighty. Arguments against vague identity (modulo independently reasonable principles) will entail there aren't vaguely existing entities or even determinately existing objects that indeterminately possess some parts.

**Keywords:** vague existence, vague identity, epistemicism

Most philosophers understand vagueness as due to semantic indecision. “On the vagueness-in-language approach, the world is fact-rich while the language is a work in progress. This is vagueness for fuzzy speakers in an exact world” (Salmon, 2010). Add to their ranks the epistemicists who understand vagueness to be due to a “special kind of irremediable ignorance of borderline cases” (Williamson, 2003) and the total will far exceed the number of philosophers who defend *de re* vagueness<sup>1</sup>. The latter maintain that vagueness is independent of how we know or represent the world, there being no fact of the matter about the way that the world itself is. “On the vagueness-in-the-world approach, the language is a finished product while the world is factually impoverished. This is vagueness for exact speakers in a fuzzy world” (2010). Of those philosophers who do defend *de re* or worldly vagueness, more are sympathetic to the view that the world contains vaguely existing objects than vaguely identical objects.<sup>2</sup> Such philosophers will accept that the world contains objects that neither determinately exist nor determinately fail to exist but will deny that there are any worldly objects that are vaguely identical to each other.<sup>3</sup>

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<sup>1</sup> I am not claiming that these theories exhaust the range of options for dealing with vagueness, nor that worldly vagueness can't occur alongside vagueness in language. See Sorensen (2012) for a survey of the options. See Merricks (2002) for a claim that there is not a distinct kind of vagueness due to semantic indecision.

<sup>2</sup> Van Inwagen (1990) and Parsons (1997, 2001) are the exceptions, both defending vague existence and vague identity.

<sup>3</sup> Akiba (2004), Baker (2007, 121-141) Morreau (2002), Salmon (2010), Hershenov (2001), Smith (2005), Tye (1990: 556; 2003, 154-163) accept vague existence, but all seven reject vague identity. Although I didn't assert it, I assumed that

I am going to take issue with the claim that one can accept *de re* vague existence without *de re* vague identity. Whether we should accept such vague existence and vague identity is another matter - I think we shouldn't - but defending that claim is not my main concern here. I do record my attraction to some well known arguments of Salmon and Evans against vague identity and add a little at the end of the paper about how it seems impossible to wrap one's mind around the idea of beings that are indeterminately identical sort of possessing the same thoughts and feelings. However, my thesis is that one can't allow vague existence without accepting vague identity – at least if one rejects that there can be spatially coincident entities of the *same* kind. Thus I will show that far more philosophers are implicitly committed to vague identity than explicitly so committed. If they are committed to vague identity, then they also ought to accept vague identity. But if vague identity is impossible, philosophers should reject vague existence as well. And a surprising consequence is that if there is no vague identity, then the charge of arbitrariness leveled against epistemicism becomes less weighty. Arguments against vague identity (modulo independently reasonable principles) will entail there aren't vaguely existing entities or even determinately existing objects that indeterminately possess some parts.

### **Vague Objects: Vague Parts, Vague Existence and Vague Identity**

There are philosophers who claim the notion of vague object is unintelligible. They can't make sense of what it could be for an object to be vague rather than the vagueness residing in our ways of knowing or representing objects. Others will claim to understand reality containing vague objects as long as that doesn't involve any objects vaguely existing. Still other philosophers might think the notion of a vague object is intelligible but there aren't any, in fact, it is impossible for there to be any such objects. They may find the concept intelligible, i.e. they can understand it, but still

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accepting vague existence didn't commit me to vague identity when I was writing my 2001 paper. Obviously, I no longer assume it.

insist it is incoherent, i.e., it doesn't cohere with other truths they hold. And we will see that there are philosophers who think that it is even misleading to speak of vague objects and suggest we instead talk of vague states of affairs. I am concerned in this section to distinguish the different notions of vague objects, show how they are intelligible, and explain why some people think there are some kinds of worldly vagueness and not others. This will all serve to lay the groundwork for my claim in the next section that there can't be vaguely existing entities unless it is possible for there to be vaguely identical entities. If vague identity is impossible, then so is vague existence. Moreover, if there is no vague identity and vague existence, then there can't even be determinately existing things of which there is no fact of the matter whether they have some object as a part.

There is a need to first get clear about the distinctions between i) determinately existing objects that vaguely possess parts, ii) objects whose existence is vague, and iii) objects whose identity is vague.<sup>4</sup> An example of the first would be a rock at the base of a mountain that was borderline between being part of the mountain and part of the valley. An example of vague existence could be found in the distant past when that mountain was being formed and it was indeterminate whether after the crashing together of tectonic plates that the crumpled earth had been pushed sufficiently upwards enough to compose a mountain. A case of indeterminate identity could occur where it was vague whether there were two overlapping mountains or one mountain with two peaks.<sup>5</sup> All of the above may be called *vague objects*.

There are philosophers who just ignore distinctions between vague part possession, vague existence and vague identity. Still another group of philosophers are split between whether any of the three instances of vagueness entail the others. Often those who claim vaguely existing entities entail vaguely identical entities don't fill in the details about why this is so. So their opponents are

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<sup>4</sup> See Williams (2008) for a survey of the different senses of vague object.

<sup>5</sup> I will explain below why I don't use the more common example of vague identity of there being various precise chunks of matter that are equally good candidates for being a mountain whose boundaries are vague.

compelled to show that they can be kept apart. I will argue that their opponents are wrong, at least if they deny that the commitment to the possibility of vaguely existing entities entails commitment to the possibility of vaguely identical entities. If there are at times vaguely existing objects, it needn't be that they overlap and are vaguely identical to any other. However, the manner in which they retain and lose parts that makes their vague existence possible could be extended to scenarios where vague identity would be forced upon them.<sup>6</sup> And if there are objects with vague parts, they need not vaguely exist. However, it is possible that each can end up so because the relationship that allows determinate objects to possess some parts vaguely just differs in degree from when the objects vaguely exist. So if vague identity is incoherent, then we should avoid positing vague existence and even the apparently harmless determinately existing objects that possess just a few other parts in a vague manner.

Some philosophers (Evans: 1978; Salmon: 1981, 2001) offer proofs against the possibility of vague identity while others state that they find the notion of vague existence unintelligible (Lewis: 1986, 212; Russell: 1923; Dummett: 1975, 314).<sup>7</sup> Those who can't make sense of vague existence don't always say what aspect of it is unintelligible. Perhaps the entire phenomenon of vague

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<sup>6</sup> This assumes the world is one in which there is more than one composite object. But even in such a world, the only composite object would still have the possibility of being vaguely identical to another object.

<sup>7</sup> Hudson says "it is obvious that the world couldn't be vague but it is overkill to describe it as incoherent" for he understands the ontological indeterminate reading of it is indeterminate whether x and y are identical at T but states "I fail to see how it is possible that the indeterminacy in question could be anything other than epistemic or buried in some vague singular referring expression..." (2005, 11). Katherine Hawley thinks vague identity is wrong but coherent. Or more cautiously, she says "I will argue that there are good reasons to suppose that there is no ontic indeterminacy in identity over time, but I will not argue that the very idea is incoherent (2001, 118-19). Evans asks about the notion of objects with fuzzy boundaries "is this idea coherent?" and then gives a proof that there can't be any vaguely identical objects which he takes to answer his question in the negative. But he understands the idea of objects with fuzzy boundaries well enough to show why there can't be any such thing. Salmon avoids speaking of *vague objects* for somewhat idiosyncratic reasons, but thinks vague existence is plausible, just not vague identity. The latter he describes as "semantically incoherent" (2010). See the discussion below.

existence makes so little sense to them that they can't distinguish the problematic from unproblematic aspects. Philosophers report that the mind boggles at the prospect of an object being somewhat there. Michael Morreau says he can't make sense of something not being *fully present*. Maybe what comes to mind is the cinema's spooky portrayal of an object fading away when it is being teletransported or annihilated by a science fiction ray gun. The object is portrayed on the screen as becoming lighter and hazier and then vanishing. Morreau actually compares the idea of not being fully present to the way a beam of light can have different intensities, writing "Now, this idea is really mysterious. How can something neither quite be nor not be there? Must we imagine the presence of vague objects is somehow a matter of degree, like the intensity of a beam of light?" (2002, 336).

Morreau expresses bewilderment in a way which suggests that the problem of vague existence involves imagining an area with just individual things and no *determinate* composition. He writes "So one might think, if ever there is no fact of the matter whether one thing is a part of another, that must be because there is no matter of fact whether the questionable part and some other things compose to make it up. But then one might think, there can be no matter of fact whether something, the composition of the questionable part and these other things, exists." (2002, 336). Morreau claims we shouldn't worry about that because we can endorse vague objects and unrestricted composition. Wherever there are any things, simple particles or not, they will compose something larger, they just may not compose an ordinary object like a cloud or a table. So Morreau denies that vague objects means vague composition. "There is no need, for such thinking is mistaken. In fact there can be vague objects though composition is precise. Imagine a vague cloud that has as its questionable part a wisp of water vapor on the edge. Suppose that, largely overlapping with this cloud, there is a collection of water droplets – cloud-minor – that is just like the cloud except that the wisp of vapor is a definite nonpart of it. Since the wisp is a questionable part of

cloud, we can suppose that there is no fact of the matter that the wisp and cloud-minor make up a cloud. The crucial point is that they can still compose to make up *something* ... Composition is completely unrestricted, and nothing has any sort of shady presence” (2002, 336-37).

Morreau appeals to constitution to account for the vagueness. Objects are not vague by being vaguely *identical* to the quantities of matter. They are *constituted* by quantities of bronze or tissue etc. Objects like cats can have vague boundaries if there is no fact of the matter which quantity of tissue constitutes them, but that doesn't make it a case of vague identity since constitution is distinct from identity (2002, 342). Neither the quantities nor identity is vague. So regardless of whether a lump constitutes a statue or a piece of wood constitutes a bench, there will exist at least that entity which may constitute another object. It will be vague whether one thing constitutes another in a certain area but there will still be something composite there.

It seems that Morreau believes that the above mentioned wisp and cloud-minor determinately compose a non-cloud and that determinate entity constitutes a vaguely existing cloud sort of composed of cloud minor and the wisp. The latter is how I interpret his above claim “that there is no fact of the matter that the wisp and cloud-minor make up a cloud.” I must admit that I don't find constituted entities that vaguely exist to be any less problematic than vaguely existing non-constituted composite entities. The latter would involve a region where smaller objects vaguely compose a larger object and don't determinately compose anything else. So to whatever extent vague composition is mysterious, “a shady presence,” constitution and unrestricted composition don't render it any less mysterious. Sure, there'll always be an object that the Xs compose, so there is no area with simples that is without any determinate composite, but there is still the additional existential vagueness of whether there is anything that is constituted. Morreau's example seems to be an instance of the vague existence of a cloud even if the same wisp and cloud-minor determinately compose something else, a non-cloud. Keep in mind that constitution theory has the constituted

object still made out of the same parts as the constituting object. Imagine an aggregate (composed) of wood molecules constitutes a vaguely existing piece of wood. There does not seem to be any difference in intelligibility between the view that there is an aggregate that constitutes a vaguely existing piece of wood and the approach wherein there is no aggregate but just a plurality of things (simples) that vaguely compose a piece of wood. In the latter there is vague composition without constitution. In the former there is both vague constitution and composition. Or consider a determinately existing piece of wood that wasn't carved enough to determinately constitute a table, further whittling needed for a determinate table to emerge. Thus the table doesn't determinately exist and it doesn't determinately not exist. So the atoms that determinately compose the piece of wood, indeterminately compose a table. Thus there is still the sort of existing, the degrees of intensity like light, and that is just as strange - but perhaps not very strange - as there being only a vague object indeterminately composed of entities that don't strictly compose anything.

Unlike Morreau, I don't find it hard to imagine some things vaguely existing without being constituted by a determinately existing constituter.<sup>8 9</sup> I suggest that the reader just imagine smaller parts coming together and not being tightly enough tied to each other to provide the requisite causal connections and processes constitutive of a determinate existence. Before that they merely composed a vaguely existing object. For example: imagine molecules coming increasingly closer together and exerting more and more causal influences on each other, the eventual outcome being they form the first living cell. Or picture a collection of logs gradually becoming a log cabin as more and more of them become firmly interlocked. Or think of a glue hardening and things that were

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<sup>8</sup> I will qualify this claim in the conclusion. It is difficult to make sense of a vaguely existing *thinking* being. It is hard to imagine oneself sort of existing but in great pain. The obstacle is that thought seems to be all or nothing, not fluctuating as life or existence does with the degree of underlying vital physiological processes. See the below discussion of Chalmers's notion of reductive explanation.

<sup>9</sup> Similar judgments are rendered by Rosen and Smith (2004), Smith (2005) and Hawley (2002).

loosely connected becoming increasingly more so. Or envision a liquid in a mold could congeal (like jello) and come to constitute a new entity.<sup>10</sup> And one could with any of the above conceive the composite entity as composed only of simples rather than parts of composites that were themselves composites. So there wasn't a liquid or organic molecules but just simples arranged liquid-wise or molecule-wise. Therefore, I don't think being *somewhat present* is spooky or unintelligible, especially where the kind-bestowing properties or processes supervene, that is, they are nothing over and above other properties or processes.<sup>11</sup> What I have in mind here is akin to what Chalmers speaks of as "reductive explanation" when discussing learning, reproduction and life (1996: 44, 108). This can be captured by the phrase that all w consists of is x, y and z. So to be alive just consists of such and such facts that can be functionally described.<sup>12</sup> Imagine an organism dying and the processes constitutive of life are there just in degree. One doesn't even have to imagine any *composites* constituting or composing the cell.<sup>13</sup> One can work within a sparse van Inwagen-style metaphysics of only simples and organisms (cells and multi-cellular organisms). It isn't hard to imagine some but not all of the life processes continuing. Or one can imagine some much lower than typical amount of cellular activity, some substandard entropy resistance, some subnormal maintenance of temperature, and similarly with other metabolic and homeostatic functions that render the life a borderline case. What I mean by the vague existence of object O is just that its candidate parts aren't

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<sup>10</sup> The Jello Museum in LeRoy New York sells molds shaped so as to produce brains made of jello, arguably an object distinct from the liquid.

<sup>11</sup> The vague existence of *simples* is spooky and I share Morreau's skepticism.

<sup>12</sup> Parfit might have meant something along similar lines with his reductionist account of personhood that involved no further fact in his *Reasons and Persons*. Perhaps *no further fact* is to be taken as meaning no separately existing fact, i.e., one couldn't have one fact without the other, even though they are not the same fact.

<sup>13</sup> Hawley (2002) maintains that there is a *modest vague existence* which is coherent and her van Inwagen-inspired conception of that is just like my response to Morreau. The *immodest vague existence* that she rejects would involve existence as a first-order property of a Meinongian-like object "which somehow straddles two domains, the existent and non-existent" (2002, 135). She denies that there is an object that sort of instantiates a first order property of existence.

related to the appropriate degree so it can be said that they either determinately compose or determinately don't compose O and instantiate its essential properties, in this case being caught up in a life in the case of an organism.

Lynne Baker, like Morreau, appeals to constitution to avoid certain puzzles of vagueness. She too combines constitution with the view that composition is unrestricted. Such precise aggregates would not be vague, though it could be vague which aggregate constituted something. But this vagueness would not be vague identity for the vagueness is in the constitution relation not the identity relation. However, Baker more clearly embraces the coherence of vague existence than Morreau. Besides there being vagueness in which of many microphysical aggregate constitutes some object, Baker believes it could also be vague whether there exists a constituted object. She defends this view with what she calls an *Argument from Natural Processes* (2007, 126). According to this view, there are natural processes that occur independently of our concepts and they do not have precise beginnings. She says that if we take biology and astronomy at face value, we'll recognize that there is no precise moment at which the solar system or later an organism came into existence.

Baker's view of vague existence differs from that of other well-known proponents of the position in that she claims vagueness is parasitical on determinacy. Something coming into existence could be a vaguely existing X only if there is a later determinate X. If the intended X never gets finished, there was no vaguely existing X (128).<sup>14</sup> So objects will exist vaguely at a time only if they will also later exist determinately. There won't be an aggregate that constitutes an indeterminately existing house if there is never a finished house.<sup>15</sup> And that indeterminately existing house at t is

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<sup>14</sup> Anticipating the objection that something must have been partially there, she compares building something that never gets built to hunting unicorns. They are both intentional activities "subject to the phenomenon of intentional nonexistence" (2007, 131).

<sup>15</sup> So "there may be indeterminacy about the number of things that exist at a time, there is no indeterminacy in the number of things that ever exist, or exist simpliciter"(Baker: 135 note 31).

identical to the determinately existing house at t1. She writes “So there is no vague identity... Thus we do not need indeterminate identity statements that, as Gareth Evans has shown, lead to contradiction when coupled with the thesis that there are vague objects.” (131)

Evans (1978, 208) seems to think the problem is that if the world is itself vague and the vagueness is not due to deficiency in our describing it, then combining that with the belief that identity statements may lack determinate truth values, will mean that the world will “contain certain objects about which it is a fact that they have fuzzy boundaries” (208). He then asks “Is this idea coherent?” and precedes to show that *de re* indeterminate identity will lead to a contradiction. So he takes the answer to the question that is the title of his article “Can there be Vague Objects?” to be no. The impossibility of *de re* vague identity reveals the impossibility of *de re* vague objects. Morreau says “the main problem with this argument from definite identities is just that there is no reason to think that things with fuzzy boundaries must have indefinite identities. Strangely, Evans did not even try to show that they must... However this might be, the omission hides a crucial difficulty with his argument which comes to light as soon as we try to complete it” (338). Morreau speculates that it might not even have occurred to Evans that having a fuzzy boundary and having an indefinite identity might be different things.<sup>16</sup>

A related but different failure to make the distinctions might be thought to occur if any worldly vagueness of an object is taken to mean that the object in question must exist vaguely. It just might be that there are objects that indeterminately have some parts while determinately possessing

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<sup>16</sup> Perhaps the fuzzy boundaries that Evans envisioned were those of overlapping entities that raise the problem of distinguishing them and therefore the impossibility of indeterminate identity would mean the impossibility of such fuzzy bounded overlapping objects. Maybe he thought that *all* vague objects were already overlapping other objects in an Unger-style problem of the many (1980). Or maybe he conceived that it was possible for any fuzzy bounded entity to become an overlapping entity and thus had in mind arguments like those I give below. One can't tell from his cryptic paper. But a charitable read of a brilliant philosopher is that he wasn't blind to some rather obvious distinctions, just assumed without argument that one would bring the others.

a sufficient number of other parts to determinately exist. So there is a kind of vague object that should be understood in a way that doesn't involve them vaguely existing at any time they vaguely possess parts. Michael Tye understands a concrete "object *o* to be vague (as Everest is) if and only if (a) *o* has borderline parts and (b) there is no determinate fact of the matter about whether there are objects that are neither parts, borderline parts or non-parts of *o*" (1990, 535-536). So on such a construal there might be no fact of the matter whether a thing has certain parts without that involving any vague existence.

Tye thought worldly vagueness is coherent and real, and he accepted vague existence. Some people may sort of exist. Tye (2003, 154-63) draws upon Lewis's depiction of Methuselah (1983, 66) in which there is one person embedded within the entity called Methuselah<sup>17</sup> ceasing to exist where another is beginning to exist but each distinct from the other. Tye claims that in a Methuselah-like case that it is vague when Anthony (who is embedded within Methuselah) ceases to exist and Tony (who is also embedded within Methuselah but only partially overlaps Anthony) begins to exist. But there is no vague identity between them, in fact, they are determinately not identical since Tony and Anthony have properties the other lacks.

Tye is not opposed to vague existence and insists that vague existence is not the same thing as vague identity nor does it imply it. Tye insists (1990, 538) worldly vagueness isn't indeterminate (vague) identity. *O* could be Mount Everest and a vague object while *o* could be a determinate object. Assuming for the sake of argument that vague identity is possible, it could be that *o* and *o* are vaguely identical but the vagueness resides in *o* (Everest). So the claim that *o* is vague is not a

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<sup>17</sup> Methuselah is not really a person on Lewis's treatment. Although there is psychological *continuity* (an overlap of memories and other mental states) for over nine centuries, there isn't a single person where Methuselah's organism is. The reason is that there aren't any of the same psychological *connections* (the same memories, desires, intentions, etc.) persisting across the 969 years of Methuselah's life and they are important to the persistence of the same person. So Lewis stipulates that a person persists for roughly every 137 years so Methuselah contains more than one embedded and overlapping person.

result of  $o'$  being indeterminately identical to  $o$ . Secondly, Tye notes that there is an argument given by Evans and separately by Salmon that if the singular terms are rigid, then there will never be indeterminate identity claims. “But nothing in this argument undermines the *intuitive* claim that Everest, for example, is a vague object” (1990, 538).<sup>18</sup>

Evans’s argument against vague identity (1978) is usually mentioned along with Nathan Salmon’s (1981).<sup>19</sup> Salmon, unlike Evans but like Tye, thinks there could be vague existence. But Salmon differs from Tye in that he insists that there couldn’t be a vague object. Existence is a property, and worldly vagueness is always just indeterminately having a property. So even the vaguely existing thing is a determinate object. He writes “Objects are not vague or indeterminate. Of course, some objects – ordinary physical objects, for example, - have indeterminate boundaries. It might also be indeterminate whether a given object exists, e.g. as it is fading away into nonexistence. Both of these phenomena are cases of indeterminacy among an object’s properties, not indeterminacy of the object itself. And object itself is just the thing it is, and as Bishop Butler observed, not another thing...”[2010: 20-21]. An object is distinct from its properties, it is not a bundle of properties, but that which has the qualities. At times it almost appears that Salmon construes objects to be like propertyless substrata, writing “The object is not it-with-such-and-such-properties. It is the very object itself, without even the clothes on its back” (2000: 20). I would think my response to Morreau’s qualms about vague existence can be extended to Salmon’s dismissal of vague objects. There are vague objects when smaller objects are insufficiently causally connected to

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<sup>18</sup> Noonan reaches a similar conclusion: “Everyone knows that Evans’s argument against vague identity in-the-world doesn’t show that there aren’t vague objects. Even if the argument succeeds all it proves is that every vague object is determinately distinct from every precise object and every other vague object” (2004, 131).

<sup>19</sup> Salmon writes that the main idea underlying their proofs is disarmingly simple: “What would  $y$  have to be like in order for there to be no fact of the matter whether it just is  $x$ ? One thing is clear: it would not be exactly like  $x$  in every respect. But in that case it must be something else, so that there is a fact of the matter after all” (2003, 239).

determinately compose the larger object. But it won't matter for my purposes in the next section since Salmon allows vague existence and determinately existing things with fuzzy boundaries. I will show that he can only do so if he allows vague identity. Since he rules out the latter (1981: 243), he should exclude the former. Although Salmon's argument against vague identity is similar to Evans's, Evans was right to assume that a compelling disproof of vague identity meant the claim that there were objects with fuzzy boundaries was equally suspect.

It is worth noting that there are other philosophers who believe that the advocates of the possibility of worldly vagueness should avoid positing the vagueness in the object. Their reasoning is different from Salmon's. Their concern is that there is no more reason to posit the vagueness in the object than in the property. (Williamson, 706; Williams, 768). Likewise for ontic indeterminacy stated in terms of parthood or boundaries (Hawley, 106-109; Williamson, 707). If the claim is that it is indeterminate that Everest includes some rock as a part, there is no more reason to place the vagueness in Everest than in the rock or the relation of parthood. If the rock had been differently located, then the statement that Everest has a rock as a part would have been determinate. Likewise for the parthood relation. If parthood had a more determinate extension, then the statement would have been more determinate. Williams (2008, 768) compares the mistake of thinking that the "blame" for metaphysical vagueness must belong to either the object or the property to assigning the responsibility of the metaphysical contingency of his sitting to either an object (himself) or a property (sitting down). Williamson likewise compares the mistake to attributing falsehood at the level of subsentential expressions. One should not ask whether the falsehood of "cats bark" is due to the falsity in cats or falsity in barks. Williamson (2003, 700) suggests we abandon the query of "whether there are vague objects?" for the question "Is reality vague?" Williamson argues that the ontological correlate of a sentence is a state of affairs and thus we should interpret the question of vagueness in reality to arise with states of affairs rather than objects or properties and relations

(2003, 699). Abandoning such talk won't affect my thesis, everything can be rephrased in terms of vague states of affairs.

The thesis defended in the next section is that that one can't accept vague existence without admitting vague identity. So Morreau, Baker, Tye, Salmon and many others are mistaken to believe they can endorse the former but not the latter. In fact, they shouldn't even accept something determinately existing but vaguely possessing a part, if they don't allow vague identity. I don't mean that something couldn't vaguely have parts at T without vaguely existing at that time. Nor do I mean that something couldn't vaguely exist at T without at that time overlapping another object to which it is vaguely identical. Rather, my claim is that the same relation that brings vague parthood could occur to such an extent that vague existence is the result.<sup>20</sup> While the vague object at one time may have enough determinate parts so its existence is not vague, it could become vague or perhaps have earlier existed vaguely during the process of its origination. Moreover, the same relation that allows for vague existence will lay the groundwork for vague identity. Now I admit that if something could vaguely exist then it could do so without at that time being vaguely identical to anything. Its identity with itself is determinate, it just sort of exists. It is a determinately self-identical but vaguely existing object. But in the end I will be open to the possibility, even sympathetic to the idea, that there can be no such things (or states of affairs) because the commitment to vague existence brings a commitment to the possibility of vague identity. The latter may doom the former even though the former would not have involved every vaguely existing object always being vaguely identical to anything. We shall see that if the problem is that vague identity is susceptible to Salmon/Evans style *reductio* or otherwise shown to necessarily never occur, then that makes vague existence unacceptable and renders both impossible. What is perhaps even more surprising is that the same type of

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<sup>20</sup> This can occur by taking away too much matter of various kinds or if there is an essential part, say an organ like the brain in persons or nucleus in cells.

reasoning would make it unacceptable that there was no fact of the matter whether objects possessed certain parts even though that would not have involved a commitment to everything with vague parts always existing vaguely or being indeterminately identical to something else.

So vague existence is in the same boat as vague identity. If one sinks, so does the other. Now I don't believe *indeterminate identity* can be defined because I don't believe *identity* can be defined. But I think I can give a mereological construal of what would likely be held by those who believed that there could be indeterminately identical composite objects - at least if they shared my hostility to there being spatially coincident objects with the same proper parts. (I provide a slight variant for those theorists who don't share my dislike of coincident objects.) Since an axiom of classical mereology is that A and B are identical if they have all the same parts, I will characterize vague identity as follows: A and B are indeterminately identical iff A and B have all of their parts in common, and there is at least one part that A or B determinately has and the other indeterminately possesses.<sup>21</sup> So entities partially overlapping would not have enough part sharing to constitute a case of vague identity. A and B would have to possess every part in common, it just being that either A or B had some parts indeterminately possessed that are determinately possessed by the other. That seems to be the indeterminate extension of the mereological claim that identical entities have the same parts. But it rules out A being a quantity or aggregate having very precise parts and being indeterminately identical to B which vaguely has some parts that A lacks. So contrary to much of the literature, I don't think there is any danger of there being an indeterminate identity between a mountain and the various overlapping precise aggregates of mountainous matter. The aggregates

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<sup>21</sup> My account would not render Baker-like constitution in cases where one vague object constituted another vague object into an instance of indeterminate identity since any determinately possessed parts by the constituted are likewise determinately possessed by the constituter and the same goes for their indeterminately possessing parts. The difference between constituter and constituted is that some may have parts derivatively that the other has and nonderivatively. See Hershenov (2008) for an explanation of that difference.

would each lack parts that the mountain indeterminately possesses. Likewise, a precise cat-like aggregate (Lewis 1993 called them P-cats) would not, as Parsons and Woodruff propose (1997), be indeterminately identical to the vague cat in the area that had indeterminate boundaries and thus indeterminately have some parts that were not possessed at all by the precise cat-like aggregate. I am assuming if A indeterminately has parts that B lacks having in any manner, that isn't vague identity for one would possess some parts the other doesn't.<sup>22</sup> But maybe it is best to relax my account and just rule out A and B as a case of vague identity where either A or B determinately has a part that the other neither determinately nor indeterminately possesses.<sup>23</sup>

A worry is that virtually anyone who believes in coincident objects standing in a *constitution* relationship (which includes four of my targets, Baker, Tye, Salmon and Morreau) would probably not accept the mereological account of A and B being identical if they have the same parts. For example, the person and the animal have the same parts but aren't identical.<sup>24</sup> Because many theorists hold the coinciding objects in a constitution relation can have the same parts, my extending the mereological characterization of identity that they reject to then characterize indeterminate identity might seem to them to be instead described as just "indeterminate coincidence".<sup>25</sup> While I don't accept there are any coincident objects, in part for the familiar considerations about the grounding of their sortal and modal differences, my constitution opponents are not so bothered.

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<sup>22</sup> Perhaps I am wrong to hold or find too significant the claim that there is a greater "ontological distance" between A and B when either completely lacks a part that the other has than there is between C and D when either determinately has a part that the other indeterminately possesses.

<sup>23</sup> So in that case P-cats which are precise aggregates and equally good candidates to compose Tibbles would each be indeterminately identical to Tibbles even though Tibbles indeterminately possessed some parts that they didn't possess in any manner.

<sup>24</sup> Some constitution theorists like Lowe would accept that spatially coincident objects don't have the same parts, i.e. the statue has hands and head while its constitution lump does not. Baker, the only one of the above four who has laid out her mereological claims in any detail, would allow that the lump derivatively has the statue's hands and head as parts.

<sup>25</sup> This characterization is due to Ken Akiba.

(Baker, for instance, just considers essential properties distinguishing coincident objects to be primitive and not in need of further grounding.) So if constitution theorists don't accept the classical mereological construal of identity, then they won't accept my indeterminacy variation of it.

However, most defenders of coincidence will accept that there can't be two objects of the *same* kind in the same place. So there can't be two distinct spatially coincident persons composed of the same parts and there can't be two distinct spatially coincident tables composed of the same parts, even though there can be an animal distinct from but co-located with the person and a mass of wood distinct from but co-located with the table. Thus I suspect that defenders of coincidence would probably accept something like a mereological characterization of identity, appropriately qualified, for objects of the *same* kind. I don't think any have so formulated it. And since the four constitution theorists that I mention don't believe there is indeterminate identity, they won't advocate any characterization of indeterminate identity. But my contention is that they should be able to agree that my mereological characterization does justice to what defenders of indeterminate identity would have in mind about the mereological makeup of indeterminately identical entities and what they themselves can avoid by following my epistemicist recommendations in my large part replacement scenarios in the next section.

### **No Vague Existence without Vague Identity**

The following table parts replacement scenario seems to me to show that that there can't be *de re* vague existence without *de re* vague identity. Let's assume a commonsense ontology in which you can only remove so much of a table's top and legs before it becomes vague whether the table

still exists. Too large a removal, the original table is gone. Too small a removal, the original table remains though reduced in size. Removing pieces of sizes in between will bring vague existence.<sup>26</sup>

But imagine “immaculate replacements” – God instantaneously replaces the parts that he removes. When a small part is removed and replaced, the original table still exists. When a very large part is removed and replaced, the original table is destroyed and a new table takes its place. When God removes and replaces an “in between” size piece of the table with a qualitatively similar duplicate piece, it is indeterminate whether the original table still exists and if the replacement parts are possessed by the original table. But there is always a table and a determinate one at that. There is never a moment where there isn’t clearly a table after the initial table is made. So our replacement case means that along with the indeterminately existing table A there is a determinately existing table B that consists of all the parts determinately possessed by table A and the latter’s newer indeterminately possessed parts. Given the earlier characterization of vague identity, then A is indeterminately identical to B for they have all the same parts, one just having some parts determinately that the other has indeterminately.

A judgment of indeterminate identity avoids there being two tables and persons, an increase of co-located objects of the same kind that is anathema to most defenders of coincident objects. So the indeterminate identity of A and B would enable the defender of the vague existence of A to account for its relationship to B after the part replacement. Those theorists hostile to co-located objects of the *same* kind as well as indeterminate identity- myself included - will instead be compelled to describe the part replacement case as not involving A or B indeterminately sharing all their parts - some determinately and some indeterminately - but rather as either A being still there and there not existing a B that is indeterminately sharing some parts with A, or B having replaced A and there

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<sup>26</sup> The semantic vagueness alternative is that there are countless overlapping tables and no fact of the matter whether the term applies to any one rather than all the others. See Smith (2005) and Hershenov (2001) for why *de re* vagueness is the commonsensical notion.

being no other candidate table or person that it shares parts with. But if theorists resist indeterminate identity in the thought experiment and accept a sharp boundary where A goes out of existence, then they should abandon their claim that there would be vague existence when the same parts are removed but not replaced.

If one doesn't like the divine replacement example, perhaps because one doesn't accept such instantaneous simultaneous removals and replacements, then consider a similar scenario involving mortals removing and replacing parts over a very brief period. It is safe to assume that if you destroy too large of a chunk of table A in your living room that the table ceases to exist. Remove and destroy a small part of the table and it continues to exist. Removing and destroying pieces of wood somewhere in between renders it vague whether the table continues to exist.

Now consider a twist on the three previous cases. In the first case where the loss was so great that the table went out of existence, we replace the extremely large missing part with a numerically distinct but qualitatively similar chunk of wood. This doesn't bring the original living room table A back into existence. If one thinks it does, it might help to imagine that the large replacement chunk was taken from another qualitatively similar table D in one's study, leaving just a few splinters behind there. The better interpretation is that we have moved table D from the study to the living room, adding a little wood to it that remained in the study after table A was destroyed.

Our second case involves our first removing a small chunk of wood from the living room table A and then replacing it with a new small chunk of wood. The original table that had become smaller when it lost a part is restored back to its original size when it gets a part added.

In the third case where the loss of an intermediate size chunk of wood had left a vaguely existing table, we replace that missing wood with an intermediate chunk. It is still indeterminate whether the original table A continues to exist because of the size of the replacement part. However, if the total amount of replacement wood had been added gradually in very small portions then there

would be reason to think the indeterminately existing table A had come back into determinate existence. The reason why is that it is very plausible that objects can undergo full part replacement if this gradually occurs. So it is as plausible, or nearly as plausible, to think that a vaguely existing object could come back into existence if it had the missing parts slowly replaced bit by bit by qualitatively similar duplicates. The ontologically significant difference between the gradual small replacements and a single very large replacement is evident in that in the latter it makes sense to think that we have just moved a different table D to the spot where table A was rather than just provided the original living room table A with some new parts. But in the case described at the beginning of this paragraph of the intermediate size replacement, it is indeterminate whether the original table A continues to exist because the replacement part was of the size that it would have been indeterminate whether or not we had just moved another table into the living room were A was located.

So as not to complicate matters with the possibility that we have created or moved an indeterminate existing table into the living room to overlap indeterminately existing table A, let's make the intermediate size replacement matter consist of two separate pieces of wood rather than an intact larger piece. These two pieces are combined at the same time with each other that they are attached to the rest of the wood of the vaguely existing table. Since we are replacing the missing wood in the living room table with two new chunks that were each too small to themselves be even vaguely existing tables, nor had ever been parts of a table located elsewhere, then there is no additional complication of our moving into or reassembling in the living room an indeterminately existing table. Moreover, the fact that the replacement wood consists of two fairly large pieces shouldn't give us any more reason to claim that the vaguely existing table has been restored to determinate existence than we had in the first case where the replacement wood had come from another table D located in your study. Since the two replacement parts in our thought experiment

are combined with each at the same time that they are being attached to the rest of the vaguely existing living room table, there is no reason to think that table A is just getting first a smaller part then subsequently another and so on.

Thus our tweaked version of the third scenario again means that along with the indeterminately existing table A there is a determinately existing table B that consists of all the parts determinately possessed by table A and the latter's newer indeterminately possessed parts. Given the earlier characterization of vague identity, then A is indeterminately identical to B for they have all the same parts, one just having some parts determinately that the other has indeterminately. I think that even believers in constitution should accept something similar to my account as the mereological construal of the view of indeterminate identity that they will likely deny because they hold that identity is determinate and so as a result are committed to there being a precise moment of substantial change in my part replacement thought experiment. So if readers are convinced by Salmon/Evans style arguments against vague identity and thus believes that there is a difference between A and B that makes them distinct, then it seems that there had to be a last splinter in which its removal or replacement made it the case that table B replaced table A.

Such readers will not admit there is indeterminate identity, but should understand the mereological conception of the indeterminate identity view that they are rejecting as amounting to roughly what I sketched for the mereological relationship of things of the *same* kind. They won't accept that all things with the same parts are identical as does the classical mereologist, nor that things having all the same parts but differing in whether they determinately possess all of those same parts are indeterminately identical. But they should accept that there could not be two things of the *same* kind that have all their parts in common. That leaves them no recourse but to favor the second of two options. The first was to accept that A and B are indeterminately identical, sharing many of the same parts, one indeterminately sharing some parts the other has determinately. But since most

constitution theorists (certainly those I discuss in the paper) will deny that there is a table or person indeterminately identical to another table or person, they will advocate the second option which is that if too much matter is replaced, then one table or person will suddenly replace the other, though they won't claim to know which was the decisive splinter or cell. Right up to that point there is just one table or person that isn't indeterminately identical to another. So it appears that the options are that one accepts vague identities because vague existence implies vague identity, or *modus tonens*, given that vague identity is impossible then there isn't any vague existence.

Thus there will be indeterminate identity unless one takes a page from the epistemicist in such a scenario and judges there to be an (unknowable) decisive splinter of wood that determines the coming into and going out of existence of tables. But if one takes an epistemicist approach here in order to avoid vague identity, then there is no need to posit *de re* vague existence when the table has a large part or many parts removed that aren't replaced. It would be arbitrary to claim that the possession of one last splinter of wood was a principled demarcation in the case in which vague identity threatened but there wasn't an equally significant splinter in the case where just vague existence lurks. It shouldn't matter that the table's parts were being removed and replaced rather than just removed.<sup>27</sup> In cases where too much matter is removed for A to still exist, we don't reach a

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<sup>27</sup> So if one believes as Salmon does that there can be a single splinter that is decisive in avoiding indeterminate identity of tables (2005, 343-44), then one shouldn't be so hostile to the epistemicist claim about the sorites as Salmon is. He states that "it is excessively implausible that removing a single grain from a heap of sand can make for a non-heap..." (2010, 22 nt 1). Or at least one shouldn't say what Salmon does if heaps are going out of existence rather than a persisting structure undergoing a phase change from heap to non-heap. Given that a final splinter is decisive in avoiding vague identity, it should also be decisive in determining the passage from existence to non-existence in non-replacement cases. So Salmon should not write that "The vagueness-in-the-world approach offers a simple, straightforward, and I believe obviously correct diagnosis of sorites arguments...the inductive premise [for every n: If  $F(n)$ , then  $F(n + 1)$ ] (e.g., 'the result of removing a single grain from a heap of sand is still a heap') is not false. Although the vast majority of its instances are true, not all are. Specifically, each of the conditionals whose antecedent or consequent is about a borderline case is neither true nor false. The inductive claim itself is also therefore neither true nor false." (2010, 26 note 28). The existentially significant cases show us that the sorites arguments are unsound for the inductive premise is false rather

different judgment about A's fate if the same amount of removed matter was immaculately replaced. So I don't think removals that leave it indeterminate whether A still exists, should elicit different judgments if the matter is suddenly replaced.<sup>28</sup> If there must be a chunk of wood (CW) that is just big enough that if removed and replaced would determine that table B has replaced table A, then there is a precise chunk of wood (CW-1) with one less splinter that if removed and replaced would mean table A still exists and table B doesn't yet exist. The removal of the latter chunk (CW-1) should also dictate that we have reached the smallest size that Table A can be reduced to and still exist in the case where its parts are removed and not replaced. So the removal of CW which has one more splinter than CW-1 would doom Table A in the case of a removal without replacement.

Likewise, it seems arbitrary to admit a fact of the matter that a splinter of wood connected to other pieces of wood in a certain manner can determine a table's origins or endings, but there is no fact of the matter whether a splinter connected in the same manner to other pieces of wood in the determinately existing table is or is not a part of that table. This is queer because there is the same degree and manner of part separation that will manifest itself in non-vaguely existing cases as in cases where there is a threat of vague existence or vague identity. The only difference is that in the first case the distance or causal ties between the part of wood and the rest of the wood will be between a determinately existing table and a wooden part that doesn't have existential import for the table, while in the other two cases it will be the same distance or causal ties between the one part of wood and the rest of the wood that will determine the existence of one table rather than another (where vague identity threatens) or the existence of just a single table (where vague existence lurks). In the second case (where vague identity threatens), the piece of wood in question will become the

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than neither true nor false. There is a decisive splinter. Perhaps only sorites arguments that involve parts or properties that are *never* existentially significant will avoid falling prey to my extension of arguments against vague identity to vague existence.

<sup>28</sup> See note 29 for further support of this point.

existentially crucial part that will determine which table it and others bits of wood compose, while in the third case (where vague existence lurks), that piece of wood will determine whether it and the other pieces compose any table at all. If the Salmon-Evans *reductio* shows that there will have to be a decisive number of splinters *and* a manner or degree in which they are connected in the vague identity case, then the same precise manner or degree of connection should be expected to govern parthood in cases where vague identity is not a concern.<sup>29</sup>

A similar argument can be run with vaguely existing human organisms.<sup>30</sup> I am assuming that we human persons are human organisms. In my view, it is better to identify them to avoid the problem of too many thinkers if persons and animals are distinct.<sup>31</sup> We can run the same thought experiment with the organism/person A undergoing too much sudden part replacement to still determinately exist but not enough removal so it determinately no longer exists. There still seems to be a determinately existing organism B that includes both old and new parts. Therefore indeterminately existing organism A and determinately existing organism B would each not have any

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<sup>29</sup> I can still maintain my thesis even if one believes that objects which vaguely exist when they lose sufficient material would still determinately exist if that same material had been immaculately replaced. I will just have to make my argument that there isn't any *de re* vague existence in a more indirect manner. There will still be a need for an epistemicist cut off in cases where too much replacement matter means table B has replaced table A. There will be a last appropriately attached splinter for A to survive. Since there must be an epistemicist solution to the parthood relationship to avoid the vague identity of A and B, that precise parthood relationship can also be relied upon to prevent vague existence. *De re* vague existence doesn't just occur just when too much matter is taken away, but also when too much matter moves from being determinately attached to indeterminately attached. But the requirement of an appropriately attached last splinter to avoid vague identity will render it arbitrary to claim that there is no such precise part relationship preventing vague existence due to indeterminate part attachment.

<sup>30</sup> So appealing to a sparse ontology that lacks artifacts won't evade the problem. And we shall see in the conclusion that there is an additional benefit to use thinking human organisms to illustrate the puzzle for it provides a reason to resolve the puzzle one way rather than the other.

<sup>31</sup> See Olson (2007) for reasons why coincidence should be avoided.

parts that the other lacks. They will either be indeterminately identical or there would be final atom or cell which if removed means B has replaced A.<sup>32</sup>

One other possibility besides an epistemicist-like precise boundary between A and B or treating A and B as indeterminately identical in my part replacement scenario is open to those who are not oppose to objects of the *same* kind being in the same place at the same time. This third alternative has two variants. The first involves there being an indeterminately existing table (or person) and a co-located distinct determinately existing table (or person) after the replacement of the removed matter. So the original entity that indeterminately possesses the new parts would continue to exist indeterminately because it didn't determinately acquire the new parts. That would mean that there were two co-located things of the *same* kind, though only one indeterminately existing, the other determinately existing. On the second variation, one could insist that both A and B determinately existed and it was just that A indeterminately possessed the new parts while B determinately possessed both the new parts and A's earlier parts that were never removed. Either variant could absurdly lead to hundreds of such tables (or persons) because the process of removing and replacing a large chunk could be repeated over and over, so, to use just the first variant, what before had been a determinately existing table would then become an indeterminately existing table, and it would be the second indeterminately existing table there. So theorists accepting this

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<sup>32</sup> One might object that this case isn't analogous to that of the table. The reason would be that organism B hasn't assimilated the new and old parts, since they aren't caught up in the same life processes but remain briefly "frozen" in an indeterminate status. But think of a new organism just composed *ex nihilo* or given life and existence by an electrical shock *a la* Dr. Frankenstein. Does the creature really need time to assimilate those parts? No biological assimilation is needed at its origins. It seems to exist immediately when there are life processes. Each part is beginning to play its role in metabolism or homeostasis which is different from whether something is not yet assimilated and not yet playing a role in the process. Beginning to play a role is determinate in a way that *sort of* playing a role is not. To see this, contrast your beginning to digest something with some entity only able to *sort of* digest something because it is missing too much physical structure for bona fide (determinate) digestion to occur. Also, it might help to think that the Biblical Adam with normal biological dispositions would not have had to digest and metabolize before his existence would be determinate.

interpretation of part replacement have to suffer the absurdity of hundreds of *thinking* persons in the same place. That might be as unattractive as vague identity - both are very unattractive. If so, then my epistemicist-friendly argument about a last splinter or cell becomes more attractive.

### **Conclusion: Is Vague Identity Incoherent?**

I have defended the thesis that vague existence can't be accepted without bringing vague identity along in its wake. If there are vaguely existing objects then there will be vaguely identical objects. And avoiding vague identity involves positing a last wooden splinter or organic atom rendering replacement tables or human persons distinct from their predecessors. But that last splinter or atom will also be existentially decisive when there isn't replacement but just loss of parts. And the precision governing whether that last splinter or atom is still a part in the existentially significant cases will be no different when possession of that part has no bearing on the table or person's continued existence. So avoiding *de re* vague identity involves avoiding either of the two other kinds of worldly vagueness and makes doing so in the latter pair seem less arbitrary and implausible.

But is vague identity so bad? There is much literature about the logic of vague identity.<sup>33</sup> Evans famously claimed that vague identity was incoherent. But he didn't finish his proof and left matters with some dubious appeals to determinacy and indeterminacy operators being duals and obeying a logic at least as strong as S5. Other critics challenged whether there aren't properties expressed by the predicates introduced by Evans or whether the inferences would go through if objects were indeterminately identical, perhaps the worldly indeterminacy bringing referential indeterminacy (Williams, 778-79). Maybe the most common objection is that Evans can't help himself to the contrapositive of Leibniz's Law if there is the possibility of truth value gaps and so it being false that A and B are identical doesn't make it true that they are not indeterminately

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<sup>33</sup> See Parsons (2001) and Williams (2008) for extensive bibliographies.

identical.<sup>34</sup> However the logical and semantic issues are adjudicated,<sup>35</sup> I want to end by suggesting a different tack. I think it is generally helpful in metaphysics to see how any account of material constitution works with people. For example, positing the spatial coincidence of objects may not seem so bad if one is thinking of statues and lumps. But it will seem a lot less attractive when imagining oneself (a person or an organism) coinciding with another being (that is a person or an organism) and a *thinking* one at that. Eric Olson's strategy is to reveal how his rivals' accounts of material objects like ourselves lead to a problem of too many thinkers (2007).<sup>36</sup> So let's try to imagine being vaguely identical to another thinking entity, i.e., there being no fact of the matter that I am identical or distinct from the other thinker. If identity can be indeterminate, then there would be experiences that were just partly one's and partly someone else's. I tend to agree with Madell who has used this tactic when criticizing Parfit's claims that reductionist accounts of personal identity allowed vague identity, and who earlier wrote:

What I fear is that the future pain will be mine; the fact that it may or may not be accompanied by a particular set of memory impressions and personality traits seems quite irrelevant...what I fear about the future pain is ...simply its being felt by me. It is equally clear that our ordinary attitude toward future pain leaves no room for the notion that whether or not some future pain is mine could be a matter of degree. We, rightly, find unintelligible that there could be a pain in the future which is part mine and part not (1989, 31-32)".

So it seems that we can't make sense of a pain being partly mine and partly not. It is no easier to do this from the third person than trying to conceive of it from our first person perspective. Pains seem to need an owner and only one owner.

Thus I sympathize, if not align myself, with those who consider vague identity to be incoherent and perhaps when the indeterminate identity involves thinking beings to be not even

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<sup>34</sup> Evans can't respond, but Salmon can. See his "Identity Facts"(2002).

<sup>35</sup> For what it is worth, I am very sympathetic to Salmon's arguments in his 2002 paper.

<sup>36</sup> Unger (2004) does the same with overlap in a version of the problem of the thinking many and moves towards dualism as a result.

fully intelligible. Since vague parthood and vague existence brings vague identity, they must be abandoned as well. And as my replacement table scenario revealed, appealing to a decisive splinter is not more arbitrary in cases of vague parthood and vague existence than it is to avoid vague identity. So the epistemicist friendly arguments against vague identity show far more than many have realized. On the other hand, if *de re* vague parthood and vague existence are accurate descriptions of the world, then worldly indeterminate identity is also the case.<sup>37</sup>

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