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On Three Attempts to Rebut the Evans Argument against Indeterminate Identity

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The goal of this paper is to assess three arguments that have been proposed to rebut the idea that the notion of indeterminate identity is incoherent. In the first part, the author presents Gareth Evans' argument purporting to show the incoherence of indeterminate identity. Next, the author assesses a rebuttal proposed by E. J. Lowe. Although the rebuttal seems sound, Harold Noonan has shown that its scope is limited. After that, a rebuttal by Peter van Inwagen is analysed. The author compares it with Lowe's and shows that consistent application of the principles van Inwagen uses leads to objects having inconsistent properties. In the final part, it is shown that although the answer proposed by Terence Parsons seems superior to both van Inwagen's and Lowe's, its scope is also limited. As a result, Evans' argument seems to stand unrefuted by these three counterarguments.

Keywords: Metaphysical indeterminacy, indeterminate identity, the Evans argument.

1.

Is indeterminacy solely a feature of language, or also a feature of reality? Several decades ago a similar question was asked about modality. Are necessity and contingency merely properties of sentences, or are they also properties of facts? The prevailing view then was that the world has no modal features. These were thought to be characteristic of our descriptions of the world. But through the work of a number of philosophers the concept of modality *de re* has become a respectable part of metaphysics (see van Inwagen 1990: 283). More recently, a similar question has been asked about indeterminacy, with the default view that there is nothing indeterminate about reality; all indeterminacy inheres in our concepts' having insufficiently delineated meanings and extensions. However, a number of philosophers have recently defended the view that indeterminacy is a feature of the world.[1] There are debates about what exactly this view entails. Some philosophers believe that anyone who accepts that indeterminacy is a feature of the world is committed to the view that sometimes it may be indeterminate whether an object *x* is identical with an object *y*. That is, some claim that the proponent of metaphysical indeterminacy is committed to indeterminate identity.

On Parsons' definition of indeterminate identity, it is indeterminate whether *x* is identical with *y* if and only if

> there is no property that *x* determinately possesses that *y* determinately does not possess, and vice versa, but there is at least one property that *x* determinately possesses such that it is indeterminate whether *y* possesses it, or vice versa, or at least one property that *x* determinately does not possess such that it is indeterminate whether *y* possesses it, or vice versa. (Parsons 2000: 31)

To get a clearer idea of what indeterminate identity might mean in reality, consider the following scenario, which employs the idea of indeterminate diachronic identity:

> You own a motorcycle—Cyclone. One day you decide to give it a bit of a facelift, and disassemble it down to the smallest parts. Due to a lack of time, you leave it disassembled on your garage floor for two years. When you return to your project, you find that a number of the parts have been damaged by rust beyond repair. You decide to invest in new parts and end up replacing about half of the components. In the end, you decide to give the motorcycle a brand-new finish—you paint it black. Since the new motorcycle now looks markedly different from the original one, you decide to conclude the grand renovation by renaming it Hurricane.

Is Hurricane the same motorcycle as Cyclone? There are reasons we can cite in favour of the identity, such as the sameness of half of the original parts, and there are reasons against the identification, such as the complete disassembly and replacement of half of the parts.[2] As a result, it seems the question has no answer. The identity of Cyclone and Hurricane is, in other words, indeterminate.

To illustrate how the example fits Parsons' definition of indeterminate identity, take Hurricane's property of being black. It is now the case that one of the objects determinately has a property, while it is indeterminate whether the other object has it. Hurricane is determinately black, but it is indeterminate whether Cyclone is black. Or suppose you bought the motorcycle in 2010. It is then determinately true that you bought Cyclone in 2010, but it is indeterminate whether you

[1] See, for instance, Baker (2007), Parsons (2000), van Inwagen (1995) and Williams (2008).

[2] Although I speak of parts here, the force of the example does not depend on any mereological claims. The point is that since the motorcycles differ in parts, they will clearly differ in properties, which are my main focus here.

bought Hurricane in 2010. If Cyclone and Hurricane do not determinately differ with respect to some properties, and let us now assume they do not, then it is indeterminate whether they are identical.

Proponents of the linguistic account of indeterminacy will say that the indeterminate status of the identity statement in question is completely due to the fact that the expressions in the statement have not been defined precisely. We could, if we wished to, stipulate that the name Cyclone only applies to the original motorcycle as long as the engine, or another part for that matter, has been retained. Or we could say that the name will apply to the object as long as at least half of the parts remain the same. On any of these precisifications it would either be true or false that Cyclone is identical to Hurricane, but since we have not determined the precise meanings of the expressions, the identity question cannot be given a determinate answer.

Proponents of the metaphysical account of indeterminacy will claim, in contrast, that the indeterminacy of the identity claim is due to the fact that the facts in the world do not determine the identity claim either way. They do not deny that vagueness is also a feature of language, but maintain that even if we sharpened all the expressions of our language, some questions about facts could still not be given a determinate answer. In particular, there might still be objects of which it is true to say that it is indeterminate whether they are identical, regardless of the way we describe them.

The notion of metaphysically indeterminate identity has struck many people as suspicious. Notably, Gareth Evans argued in an influential paper that it is downright incoherent (Evans 1978). He showed that if we assume that objects are indeterminately identical, a valid argument can be constructed to show that the objects are, in fact, distinct. Let us look at the argument in greater detail.

(1) $\nabla(a=b)$
(2) $\lambda x[\nabla(x=a)]b$
(3) $\neg\nabla(a=a)$
(4) $\neg\lambda x[\nabla(x=a)]a$
(5) $\neg(a=b)$ (Evans 1978: 208)[3]

Premise (1) is the hypothesis of indeterminate identity and states that it is indeterminate whether a is identical to b. (2) follows by property abstraction from (1) and states that b has the property of being such that it is indeterminate whether it is identical to a. The idea is that if it is true that it is indeterminate whether a is identical to b, then b must possess a certain property, namely, the property of being such that it is indeterminate whether it is identical to a. (3) is a generally accepted truism—it is not the case that it is indeterminate whether a is identi-

[3] This paraphrase of the Evans argument differs from the original by using the λ notation to express property abstracts where the original uses circumflexed variables. '$\lambda x[\nabla(x=a)]b$' reads 'b has the property of being such that it is indeterminate that it is identical to a'. '∇' is the indeterminacy operator and reads 'it is indeterminate that'.

cal to *a*. But then it is not the case that *a* has the property of being such that it is indeterminate whether it is identical to *a*, as (4) states. Clearly, then, according to (2) and (4), *b* and *a* differ with respect to a property. By the contrapositive of Leibniz's Law, if objects differ in properties, they must be different. From this it follows that (5)—it is not the case that *a* is identical to *b*. As a result, any claim as to the indeterminacy of identity of objects leads to the claim that the objects are actually different. The concept of indeterminate identity is incoherent.

The proof has generated extensive discussion. Below, I will focus on answers by three philosophers and assess their merits.

2.

In a brief paper, E. J. Lowe (Lowe 1994) suggests a rebuttal to Evans' argument based on the idea that one cannot legitimately infer from the claim that it is not indeterminate that *a* is identical to *a* the claim that *a* does not have the property of being such that it is indeterminate whether it is identical to *a*, because this property is not determinately distinct from the property, which *a* possesses, of being such that it is indeterminate whether it is identical to *b*. Let us look at the details.

Lowe claims that if, according to (2), *b* has the property of being such that it is indeterminate whether it is identical to *a*, then *a* must have the symmetrical property of being such that it is indeterminate whether it is identical to *b*. But since these two properties only differ by the permutation of '*a*' and '*b*' they cannot be determinately distinct, for *a* and *b* are not determinately distinct. But then the claim made in (4) cannot be true: it cannot be true that *a* does not have the property of being such that it is indeterminate whether it is identical to *a* (Lowe 1994: 113–114). It is indeterminate that this property is identical to the property of being such that it is indeterminate whether it is identical to *b*, and *a* does have this latter property. So, at best, it must be the case that it is indeterminate that *a* does not have the property of being such that it is indeterminate whether it is identical to *a*. But in that case the argument fails to locate a definite difference in the properties of *a* and *b* and cannot lead to conclusion (5) by the contrapositive of Leibniz's Law.

This is an ingenious rebuttal of the Evans argument, but it has been shown that it does not cut deep enough.

3.

In his response (Noonan 2003), Harold Noonan claimed that Lowe's rebuttal only works for identity-involving properties, such as the ones in the original statement of Evans' argument. However, he maintains that the argument can be formulated so as to involve other properties and that in such cases the rebuttal is ineffective: '… what Lowe is assuming is that the Evansian pattern of argument against vague identity in the world *essentially requires appeal to properties only ex-*

pressible using the concept of identity. But this is incorrect' (Noonan 2003: 115–116).

I will not paraphrase Noonan's own examples but will instead illustrate his reasoning by applying it to the Cyclone–Hurricane scenario. Consider the predicate 'black'. The predicate is true of Hurricane, so it is not indeterminate whether Hurricane is black. But it is indeterminate whether Cyclone is black. So, Hurricane does not have the property of being such that it is indeterminate whether it is black, but Cyclone does have that property. By the contrapositive of Leibniz's Law, Cyclone and Hurricane must be different. Put formally, where 'P' stands for the predicate 'black', 'a' refers to Cyclone and 'b' refers to Hurricane:

(1*) $\nabla(a=b)$
(2*) $\mathrm{P}b$
(3*) $\neg\nabla\mathrm{P}b$
(4*) $\neg\lambda\mathrm{x}[\nabla\mathrm{P}x]b$
(5*) $\nabla\mathrm{P}a$
(6*) $\lambda\mathrm{x}[\nabla\mathrm{P}x]a$
(7*) $\neg(a=b)$

It is hard to see how one could utilize Lowe's strategy here. This strategy is based on the claim that a and b only 'differ' in identity-involving properties that are indeterminately distinct, so a and b cannot differ determinately. But what properties in this version of the argument could be the candidates for the indeterminately distinct properties? There is only the property of being black, and that property does not make any reference to either Cyclone or Hurricane, so the indeterminacy of their identity cannot do the work it does in the above identity-involving properties. In other words, one could not deny premise (4*), which states that Hurricane does not have the property of being such that it is indeterminate whether it is black, on the grounds that this property is indeterminately identical with some property that Hurricane does have. What property would that be?

I find Noonan's argument quite convincing. That is, if we accept that there is such a property as the property of being such that it is indeterminate whether it is black, Cyclone and Hurricane determinately differ in possession of this property and must, as a result, be different objects.

Let us now turn to van Inwagen's solution, compare it with Lowe's and see whether it constitutes an improvement.

4.

It should be noted at the outset that van Inwagen would not accept the Cyclone–Hurricane example as one of indeterminate identity. Van Inwagen's ontology only contains two kinds of objects—simples and organisms (see van Inwagen 1995). Motorcycles are mere simples arranged motorcyclewise, and, thus, the question of 'their' identity never arises. But van Inwagen's strategy for dealing with Evans' argument is quite independent of the reasons for his ontological asceticism, so we may ignore this detail.

The central idea of van Inwagen's response to Evans' argument is that if objects are indeterminately identical and one of them possesses a certain property, then the other must possess that property at least indeterminately (see van Inwagen 1995: 253). But if that is the case, we will not be able to find a determinate difference between them and, thus, reach the conclusion of Evans' argument. Let us now look at the details.

Van Inwagen develops a semantics for the language of first-order logic including identity, property abstraction and the sentence operator 'indef' which abbreviates 'it is neither definitely true nor definitely false that' (van Inwagen 1995: 246). His aim is to show that the use of property abstraction in Evans' argument can reasonably be considered invalid (van Inwagen 1995: 246). The semantics utilizes three truth values: 1, 0, and ½. Van Inwagen shows that a model can be found in which the step from premise (3) to premise (4) does not preserve definite truth, because it leads from a claim with truth value 1 to a claim with truth value ½, thus making the argument invalid.

It will not be necessary to reconstruct the whole semantical fragment that van Inwagen develops. It is only important to realize why the inference from (3) to (4) is invalid. Let us, first, restate the inference slightly more succinctly. In this section, I will use van Inwagen's operator 'indef' instead of '∇'.[4]

The crucial inference can now be restated as follows:

$$\neg\text{indef}\,(a=a) \;\Box\; \neg\lambda x[\text{indef}\,(a=x)]a$$

I will now paraphrase those components of the semantics that will enable us to evaluate this inference.

1. A *universe* **U** is a non-empty set of objects.
2. A *pairing on* a universe is a (possibly empty) set of two-membered sets (pairs) of members of that universe.
3. Objects are *paired* iff it is indefinite whether they are identical.
4. If a constant '*a*' refers to object A and if A is paired with B, then B is the *fringe referent* of '*a*'.
5. The *extension* of an identity predicate contains just the referent

[4] While writing this paper, I had to make a decision about what notation and terminology I would use to speak about the various theories, because they differ in these respects. Van Inwagen uses 'indefinitely' where others use 'indeterminately'. I generally use 'indeterminately' throughout this text, and only when I directly refer to van Inwagen's definitions and notation do I respect his term 'indefinitely' and the operator 'indef'. Also, like Evans, van Inwagen uses circumflexed variables where others use the λ notation to express property abstracts. I adopt the latter alternative. Finally, van Inwagen deviates from the original statement of the Evans argument by permuting '*a*' and '*b*'. I do not adopt this strategy and paraphrase Inwagen's rebuttal to fit the original statement of the Evans argument.

of its term; the *frontier* of an identity predicate contains just the fringe referents of its term.

6. The result of prefixing '¬' to a predicate having extension *e* and frontier *f* is a predicate having extension **U**-($e \cup f$) and frontier *f*.
7. The result of prefixing 'indef' to a predicate having frontier *f* is a predicate having extension *f* and an empty frontier.
8. The extension and frontier of an *abstract* are the extension and frontier of the predicate on which it is formed.
9. An identity sentence is:
   a. true iff something is the referent of both terms;
   b. ½ iff nothing is the referent of both its terms and the referents of its terms are paired.
10. An ascription sentence (that is, a sentence in which a property is ascribed to an object) is
    a. true iff the referent of its subject belongs to the extension of its abstract;
    b. ½ iff the referent of its subject does not belong to the extension of its abstract, and either (a) the referent of its subject belongs to the frontier of its abstract, or (b) a fringe referent of its subject belongs either to the extension or to the frontier of its abstract;
    c. false iff neither the referent nor a fringe referent of its subject belongs either to the extension or to the frontier of its abstract.
11. If 'φ' is true, then 'indef φ' is false; if 'φ' is ½, then 'indef φ' is true; if 'φ' is false, then 'indef φ' is false.
12. If 'φ' is true, then '¬φ' is false; if 'φ' is ½, then '¬φ' is ½; if 'φ' is false, then '¬φ' is true.
13. A valid inference form is truth-preserving and does not lead from the value ½ to false. (van Inwagen 1995: 249–251)

Van Inwagen then considers the following model:

{A, B}, {{A, B}}, '*a*' ref A, '*b*' ref B

On this model, the universe contains only two objects, A and B; these objects are paired, that is, indefinitely identical; and A is the referent of '*a*' and B is the referent of '*b*'.

The left-hand side of the inference consists of the negation of an indeterminate identity sentence. The embedded sentence '(a=a)' meets condition 9, because the referent of both terms is A, and, therefore, is true. According to 11, 'indef (a=a)' is false. According to 12, '¬indef (a=a)' is true. This is just what we would intuitively expect: it is not true that the identity of *a* to *a* is indefinite.

The right-hand side is the negation of a sentence which ascribes the property of *being such that it is indeterminate whether something is identical to a* to the referent of '*a*'. Again, intuitively and in accordance with Evans' reasoning we would judge that this sentence is true: object

A does not have the property of being such that it is indeterminate whether it is identical to A. But on the above model the value of this sentence comes out as ½. Let us look at the individual evaluation steps.

At the core of the sentence is an identity predicate '(a=x)'. According to 5, the extension of the predicate contains the referent of *a,* that is, the object A, and the frontier contains the only fringe referent of *a*, that is, object B. Next, according to 7, the extension of the predicate 'indef (a=x)' is the same as the frontier of the predicate '(a=x)', that is, object B, and its frontier is empty. The extension and frontier of the abstract 'λ*x*[indef (*a*=*x*)]' are the same as those of the predicate 'indef (a=x)', according to 8. Importantly, according to 10, the value of the ascription sentence 'λ*x*[indef (*a*=*x*)]*a*' will be ½: the referent of the subject *a*, that is, object A, does not belong to the extension of 'λ*x*[indef (*a*=*x*)]'—we have just seen that that extension contains object B. But a fringe referent of *a*, that is, object B, belongs to the extension of the abstract. According to 10b, this gives the ascription sentence the value of ½. Finally, the negation of a sentence with the value of ½ has, according to 12, the value of ½. Thus, the value of the complete sentence on the right-hand side of the inference is ½. The inference step from premise (3) of the Evans argument to premise (4) does not preserve truth, because it leads from a true sentence to a sentence with the value of ½. That means, according to 13, that the inference is invalid.

The above reasoning can be put less formally as follows. Suppose that we are not dealing with an object indefinitely identical to another object, but with a regular object the identity of which is definite. Call the object C. In such a case, it is quite obvious that C is definitely identical to C, that it has the property of being definitely identical to C, and, as a result, that it does not have the property of being indefinitely identical to C. But here we are not dealing with such regular objects. We are dealing with objects A and B which are indefinitely identical. And the key intuition is that if one of them has a certain property, the other one must 'sort of' have it too' (van Inwagen 1995: 255).[5] So if B has the property of being such that it is indeterminate whether it is identical to A, then because it is indeterminate whether B=A, A must also 'sort of' have the property of being such that it is indeterminate whether it is identical to A. And this 'sort of' status is formally expressed by the fact that the sentence which ascribes to A the property of being such that it is indeterminate whether it is identical to A has the value of ½ and its negation as well.

Van Inwagen illustrates this reasoning by examples involving empirical properties. In one of them, he describes *the Cabinet*, an infernal philosophical engine which can disrupt the life of anyone who enters in such a way that it is indefinite whether the person who later emerges from it is the same person as the person who entered. The person who

[5] This does not preclude the possibility that A and B fully share some of their properties.

entered is called Alpha, the person who emerged is called Omega. Since we do not know whether Alpha survived the changes in the Cabinet, it is indefinite whether Omega is identical to Alpha (van Inwagen 1995: 241–242). Suppose further that Omega is hanged when he emerges from the Cabinet. Van Inwagen comments: 'it is quite definitely true of Omega that *he* dies by hanging. Could it be definitely false of Alpha that *he* dies by hanging? It is hard to see how this could be, given that it is not definitely false that Alpha is numerically distinct from Omega' (van Inwagen 1995: 253).

Or consider again our Cyclone–Hurricane example. You have painted the motorcycle black. As a result, it is definitely true of Hurricane now that it is black. Could it be definitely false of Cyclone that it is black? Again, it is hard to see how it could, given that it is not definitely false that Cyclone is numerically distinct from Hurricane.

Van Inwagen then concludes: 'Should matters be different if [the property abstract] contains the symbols "=" and "indef"? I do not see why they should' (van Inwagen 1995: 254). In other words, even if the property in question is, say, *the property of being such that it is indefinite whether it is identical to a*, the above reasoning still holds. If B has this property, then A must have it indefinitely, because it is indefinite whether it is identical to B. As a result, it is indefinite whether A has the property of being indefinitely identical to A.

In what follows, I will first compare van Inwagen's strategy with Lowe's, and then express concerns about its effectiveness. I will show that the consistent application of one of van Inwagen's key principles leads to objects having inconsistent properties.

5.

There is an interesting parallel between Lowe's and van Inwagen's approaches. Both of them attack the inference from (3) to (4). Both argue that from the fact that it is not indeterminate whether *a* is identical to *a*, one cannot infer that *a* does not have the property of being such that it is indeterminate whether it is identical to *a*. But they do it for slightly different reasons. Lowe bases his strategy on considerations related to the identity of properties, which is something van Inwagen does not consider. For Lowe, the property of being such that it is indeterminate whether it is identical to *a* is not determinately distinct from the property of being such that it is indeterminate whether it is identical to *b*. But since object A has this latter property, it cannot be claimed that it determinately does not have the former property. At best it can be claimed that it is not determinate that it does not possess it. But, to repeat, the reason inheres in the fact that the two properties are not determinately distinct.

Van Inwagen seems to suppose that we can reach the same conclusion from the mere fact that the objects that allegedly have those properties are not determinately distinct. He states that 'if a constant *k* definitely denotes something *x*, and there is a *y* such that it is indefinite whether *x*=*y*, and *y* definitely has the property denoted by the abstract F, then ⌜*k* has F⌝ should receive a value of at least ½' (van Inwagen 1995: 254). As a result, if *b* definitely has the property of being such that it is indefinite whether it is identical to *a*, then since it is indefinite whether *b*=*a*, the sentence '*a* has the property of being such that it is indefinite whether it is identical to *a*' must receive a value of at least ½. That is why it cannot be true that *a* does *not* have the property of being such that it is indefinite whether it is identical to *a*.

There is one seeming advantage to van Inwagen's approach. We have seen that Lowe's reasoning fails if we formulate the Evans argument using properties not involving identity, for then he loses ground for his claim that the properties in the original Evans argument are indeterminately identical, because they only differ by the permutation of their constants. Nothing in van Inwagen's approach suggests, however, that his reasoning would be limited to identity-involving properties. After all, the above principle applies to properties generally. This opens the possibility of refuting even those versions of the Evans argument that involve regular properties, such as being black. I will attempt to show, however, that there are unwelcome consequences.

6.

Consider again the fact that Hurricane is black. There is nothing indeterminate about this fact. It is just there, standing in front of you, black. Now take van Inwagen's principle that if it is indeterminate whether *a* is identical to *b* and *a* determinately possesses a certain property, then *b* must possess that property at least indeterminately. As a result, Cyclone has (at least) indeterminately the property of being black. That makes sense, because if the motorbike standing in front of me is determinately Hurricane and indeterminately Cyclone, and if Hurricane is determinately black, then Cyclone must be indeterminately black.

But notice that van Inwagen's principle is a general one and nothing prevents us from using it to reason back from Cyclone to Hurricane. We have now concluded that Cyclone is indeterminately black, that is, that Cyclone has the property of being such that it is indeterminate whether it is black. But Cyclone is indeterminately identical to Hurricane and, according to van Inwagen's principle, any property it has will be such that Hurricane will have it at least indeterminately. So if Cyclone is indeterminately black, it must be true of Hurricane that it is indeterminate that it is indeterminately black. But this is clearly inconsistent with the fact that Hurricane is, right there in front of me, black. How could an object determinately be black and at the same time be such that is indeterminate whether it is indeterminately black?

To see the problem even more clearly, consider van Inwagen's own example with the Cabinet. Alpha enters the Cabinet. The Cabinet causes changes to Alpha resulting in its being indeterminate whether

Alpha has survived. Then someone, Omega, emerges from the Cabinet and we immediately hang him. Omega is clearly dead. This is as determinate as anything can be. But it is indeterminate whether Omega is Alpha, so, by van Inwagen's principle, it is indeterminate whether Alpha is dead. Good. But if it is indeterminate whether Alpha is dead, by the same principle it must be the case that it is indeterminate that it is indeterminate that Omega is dead. And I do not see how that could be if it is quite clear that Omega is dead.

Or consider that you behead Omega. There he lies, his head separated from his body. Obviously, he is dead and determinately so. Suppose someone doubts: 'Well, I am not saying that it is *indeterminate* that Omega is dead; that is clearly not the case. But what I am saying is that the indeterminacy of Omega's death is indeterminate.' What would that mean? That would mean that *perhaps* it is indeterminate that Omega is dead, but *perhaps* it is not indeterminate, and, as a result, Omega is either determinately dead or determinately alive. I think that, looking at the head lying 3 feet away from the body, these speculations cannot be taken seriously.

To drive the point home, consider an analogy with epistemic certainty. If something is determinately the case, it is certain that it is the case. If something is indeterminately the case, it is uncertain whether it is the case. Suppose we say that it is certain that Omega is dead and then add that it is uncertain that it is uncertain that Omega is dead. That is a paradox. Of course, it would be a more blatant paradox if we only added that it is uncertain that Omega is dead. But even if we weaken the uncertainty of Omega's death by declaring even that fact uncertain, there still remains a grain of uncertainty, which is inconsistent with what we see outside the Cabinet. Uncertainty about uncertainty does not make a certainty.

The advantage of considering the argument with empirical properties is that it shows us clearly that there is an inconsistency in van Inwagen's rebuttal, something which is less clear when we ponder over the cases with identity-involving properties. In the identity-involving cases we rely on our intuitive a priori judgments about the concept of identity. In the empirical-property-involving cases we rely on the evidence of our senses. If someone wants to claim that it is indeterminate that Omega is indeterminately dead, I just point to the corpse. But, ultimately, the fate of these cases must be the same. You are looking at Hurricane. It is there and it is definitely identical with Hurricane. How could it at the same time be indeterminate that it is indeterminately identical with Hurricane?

7.

Could my reasoning be blocked? Could I have taken an illegitimate step? The reasoning consists in two steps. First, I have reasoned from an object definitely having a property to an object (indefinitely identical to the former object) having the property indeterminately. Second, I have reasoned back from this latter object's having the property indeterminately to the former object indeterminately having this property indeterminately.

Perhaps I have not paid careful attention to van Inwagen's formulation of the key principle. He states that 'if a constant *k* definitely denotes something *x*, and there is a *y* such that it is indefinite whether x=y, and *y* definitely has the property denoted by the abstract F, then ⌜*k* has F⌝ should receive a value of at least ½' (van Inwagen 1995: 254). The relevant condition is '*y* definitely has the property denoted by the abstract F'. The principle says nothing about the situation when it is indefinite whether an object has the property denoted by the abstract F. So perhaps we are not allowed to reason back from Cyclone to Hurricane and from Alpha to Omega, because neither Cyclone nor Alpha has the relevant property definitely. It is indefinite whether they have them, and the principle does not warrant reasoning back to Hurricane's or Alpha's having that relevant property with a further degree of indefiniteness.

But this sort of reply would seem ad hoc to me. By accepting the validity of the inference from (1) to (2), van Inwagen accepts that the fact that it is indefinite whether *a* is identical to *b* (a claim about the indefiniteness of a certain state of affairs) entails that *b* definitely has a certain property, namely that of being such that it is indefinite whether it is identical to *a* (a claim about an object having a certain property). Similarly, I do not see why we could not claim that, since it is indefinite whether Cyclone has the property of being black (a claim about the indefiniteness of a certain state of affairs), then Cyclone definitely has a property of being such that it is indefinite whether it has the property of being black (a claim about Cyclone's property). Blocking this inference while retaining the inference from (1) to (2) seems unjustified. But if we accept the inference, then we have to accept that Cyclone definitely has the above property, and we may apply van Inwagen's principle again to reason back to Hurricane having that property indefinitely. Finally, we reach the property of being such that it is indefinite whether it is indefinite whether it is black, which, I claim, is inconsistent with the property of being black.

I conclude that iterating the application of van Inwagen's principle leads to the objects' having inconsistent properties. As a result, van Inwagen's rebuttal of the Evans argument must be abandoned.

8.

We have seen that to avoid ending up with objects with inconsistent properties, the defender of van Inwagen's strategy would have to block iterating the application of the crucial principle. That would mean allowing that Cyclone has the property of being such that it is indeterminate whether it is black, but denying that we could reason back to Hurricane having the property of being such that it is indeterminate whether it is indeterminate whether it is black. I have argued this restriction is unmotivated.

But a more sweeping strategy has been defended in the literature, which aims to strike the Evans argument at two points. The strategy is to show that the use of property abstracts throughout the argument is illegitimate. This amounts to showing that both the step from (1) to (2) and the step from (3) to (4) are invalid, because it is not legitimate to infer anything about an object's properties from the indeterminacy of its identity. Such a solution has been defended by Terence Parsons (2000) and we will look at it now.

What the Evans argument assumes is that premise (1) reports a fact about *b*, namely the fact that it is indeterminate whether it is identical to *a*, and that we may express the fact explicitly in (2) by ascribing to *b* a property, namely the property of being such that it is indeterminate whether it is identical to *a* (Evans 1978: 208).

But this is not the only way one can look at the situation. The sentence expressed in (1) could be true even if there were not a particular property that *b* has. (1) states that it is indeterminate whether *a* is identical to *b*. The reason this is true is not because *b* has the property of being such that it is indeterminately identical to *a*, and *a* has the property of being such that it is indeterminately identical to *b*. Rather, (1) is true by virtue of it not being determinate whether the properties that one of the objects determinately possesses are determinately possessed by the other, and the properties one of the objects determinately does not possess are determinately not possessed by the other. In other words, (1) is made true by the complex fact or state of affairs in which *a* and *b* occur, and it is not necessary to postulate further properties of the objects to make (1) true. The fact that it is indeterminate whether *a* and *b* are identical is, in short, *fully reducible* to the first-order properties of *a* and *b* and the ways in which *a* and *b* exemplify them, and no *further properties* need be postulated to explain the fact.

Parsons' rebuttal is based on the denial of the principle that for every predicate there is a property the predicate expresses. This is a controversial point, but Parsons argues that it is reasonable to abandon the principle in indeterminacy contexts. Before I elaborate, I should mention that Noonan, who endorses the Evans argument, is well aware of an answer along these lines, but challenges it. He admits that in some contexts, such as intensional contexts, predicates do not necessarily express properties. He considers the predicate 'John believes *x* to be identical with Tully': '… if John believes Tully to be identical with Tully, but does not believe Cicero to be identical with Tully, it does not follow that Tully and Cicero differ in their properties' (Noonan 2003: 144). The reason for this is that the difference only lies in the different ways that the objects are *represented*. But, Noonan claims, friends of indeterminate identity want to say that the identity between *a* and *b* is indeterminate due to how *a* and *b* are *in fact*, not just due to the way we may represent them (Noonan 2003: 144). In other words, it is easy to understand why the fact that someone believes something about an object does not constitute the object's having a property. But it is not so easy to understand how the fact that object *b* is indeterminately identical to object *a* does not constitute a property of *b* when at the same time it is assumed that the indeterminacy is *de re* and not just in the way we represent the objects.

But Parsons does offer a reason that is independent of the above considerations. The reason can be most clearly seen when we unpack the concept of identity by means of equivalence of property exemplification (Parsons 2000: 50). The sentence

$(a{=}b)$

can be expressed as

$(\mathrm{P})\ (\mathrm{P}a \leftrightarrow \mathrm{P}b)$,

that is, as the claim that *a* and *b* have exactly the same properties.

$\nabla(a{=}b)$

then renders

$\nabla(\mathrm{P})\ (\mathrm{P}a \leftrightarrow \mathrm{P}b)$.

The question of whether there is a property of 'being such that it is indeterminate whether it is identical to *a*' then turns into the question of whether the following abstract represents a property:

$\lambda x[\nabla(\mathrm{P})\ (\mathrm{P}a \leftrightarrow \mathrm{P}x)]$

The abstract reads 'the property of being such that it is indeterminate whether it has exactly the same properties as *a*'. The problem with this abstract is, according to Parsons, that it 'must "quantify into" an indeterminacy connective; the abstraction operator on the outside must bind a variable within the scope of the indeterminacy connective' (Parsons 2000: 50). This leads to a problem 'closely associated with the paradoxes of naïve set theory' (Parsons 2000: 50).

In other words, the phrase 'exactly the same properties as *a*' actually refers to *all* properties of *b* including the property expressed by the complete abstract: '… the abstract stands for a property that is in the range of its own property variable' (Parsons 2000: 51).

According to Parsons, this self-referential aspect of the abstract is a good reason why we should be sceptical whether it actually expresses a property that enters the definition of identity.

This is an ingenious response to the Evans argument. But it seems clear to me that, ultimately, its fate is the same as that of Lowe's argument. Perhaps Parsons is right that the predicate 'being such that it is indeterminate whether it is identical to *a*' does not express a property, but we have seen that the Evans argument can be formulated without any reference to identity-involving properties. And it is also clear that Parsons cannot make use of his argument against the existence of identity-involving indeterminate properties to argue about other properties that may figure in the Evans argument.

Let us return to the argument we formulated in part 3, where ‘P’ stands for the predicate ‘black’, ‘a’ refers to Cyclone and ‘b’ refers to Hurricane:

(1*) $\nabla(a=b)$
(2*) Pb
(3*) $\neg\nabla Pb$
(4*) $\neg\lambda x[\nabla Px]b$
(5*) ∇Pa
(6*) $\lambda x[\nabla Px]a$
(7*) $\neg(a=b)$

Adopting Parsons’ strategy, we might want to question whether the steps from (3*) to (4*) and from (5*) to (6*) are legitimate. We might object that there is no guarantee that the predicates expressed in (3*) and (5*) express genuine properties, as suggested by the property abstracts in (4*) and (6*). But how could we justify the claim now? In the original formulation of the argument we could unpack the property of identity in terms of the equivalence of property exemplification and show that the property of being such that it is indeterminate whether it is identical to a falls among the properties that the property actually quantifies over. But in this formulation, there is no identity-involving property which could be unpacked. There is the property of being such that it is indeterminate whether it is black and the problem of ‘quantifying into’ does not occur. Since that was the primary reason why Parsons refused to accept the existence of the problematic properties and that reason does not apply here, we are left wondering why the inference should be illegitimate.

Conclusion

The Evans argument is based on the idea that the fact that it is indeterminate whether a and b are identical projects into their properties. While b has the property of being such that it is indeterminate whether it is identical to a, a lacks this property. Evans concludes that this makes a and b distinct. I have looked at three attempts to block this conclusion. Lowe’s response was based on the claim that the identity-involving properties that the Evans argument employs do not make a and b determinately distinct. But, as Noonan has, in my opinion conclusively, shown, Lowe’s rebuttal is toothless when confronted with formulations of the Evans argument which do not employ identity-involving properties. Van Inwagen’s response is based on the idea that indeterminately distinct objects simply cannot differ determinately in the properties they exemplify. So even when b exemplifies the property of being such that it is indeterminate whether it is identical to a, we must conclude that a has this property at least indeterminately, so it cannot be determinately distinct from b. By using examples that, again, avoid reference to identity, I have shown that this strategy leads to objects having inconsistent properties. Finally, Parsons' rebuttal is based on the idea that the fact of indeterminate identity between *a* and *b* need not mean that they exemplify some further identity-involving properties and the idea that the property of being such that it is indeterminate whether it is identical to *a* is problematic due to self-reference. Even though this is an ingenious response, it is, again, toothless against formulations of the Evans argument that do not employ identity-involving properties, as I attempted to show in the final part of this paper. Consequently, the three arguments I have considered do not threaten the Evans argument and, as a result, its central idea that the notion of indeterminate identity is incoherent, seems to stand unrefuted. None of the three attempts to rebut the Evans argument have shown conclusively that the relation of indeterminate identity has any instances.[6]

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