5-2000

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Matthew C. Niece

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What Is Wrong with Indeterminate Identity?

A Thesis

Presented in Partial Fulfillment of Requirements for the Degree of Master of Arts in the College of Arts and Sciences Georgia State University

2000

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Acknowledgements

I would like to extend my sincere thanks to the members of the Department of Philosophy who have played such a significant role in preparing me to write this thesis. Most notably, Dr. Steven Rieber has for the past two years seen to it that I receive the very best philosophical training. He has been very patient with every new idea I have tested out on him. In addition, he has at every turn been ready with penetrating questions designed to challenge my assumptions and basic beliefs. Without his persistence on some matters I would not have ever felt prepared to write what follows. I hasten to add that any lapses in reasoning are mine alone.

I also wish to thank Dr. Robert Almeder and Dr. George Rainbolt for sitting on my committee and Katie Davis for being patient enough to listen to me every time I tried to work out a problem.

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I. The Puzzle

The most famous of the identity puzzles is actually thousands of years old. It is the puzzle of the ship of Theseus. The strongest version of the story goes as follows. Suppose there is a ship that is remarkable only in that it is dear to the heart of the nation that owns it. The ship has become a national symbol. Because of its importance, everyone wants to preserve the ship and keep it sailing. However, the ship is made of wood and as we all know, wood decays. A campaign is started to totally replace every wooden part of the ship with iron which is far superior to wood in terms of longevity and durability. Suppose also that the preservation campaign is a grassroots effort and, like most grassroots endeavors, is not well funded. Since money is short but the cause is deemed important enough to pursue even if it takes many years, the leaders of the movement decide to replace the wooden planks with iron a few planks at a time. This is a very slow process and drags out for quite some time. Suppose also that as the process is under way, someone less supportive of the effort surreptitiously acquires each wooden plank that is removed from the boat, labels it with the location on the original ship and stores it. After a good number of years, the replacement is complete, the iron boat sets sail and everyone applauds. However, once our clandestine historian has all the wooden pieces of the original ship, he puts them back together again in exactly the positions they were in on original boat (this is why he labeled them). This process takes some more time but one day the wooden boat sets sail and he says to the populace, "*I* am the one that preserved our boat. Look! There is the ship of Theseus."

The question is, which of the two ships, the reconstructed wooden ship or the iron ship, can lay claim to being the ship of Theseus? If we say that the iron ship is Theseus' we are uncomfortable with the fact that it has none of the original parts of the original boat. However, if we say that the reconstructed ship is Theseus' we do so against the intuition that objects might have parts replaced but remain the same object. If we put a new carburetor in my car, we are not inclined to say that I have a new car once the repair is made. Parts are replaced and yet identity is retained in most cases. I could even have artificial limbs now and still be me. Consequently, we seem to be left in a quandary. While many of us have intuitions that might swing our decision in favor of either the rebuilt boat or the iron boat being the ship of Theseus, any number of minor adjustments to the story will often swing our opinions back. For instance, we might modify the story so that only ninety percent of the wooden planks have been replaced or even eighty, seventy, or sixty percent. If someone resisted this tactic and felt strongly that either the iron ship or the wooden ship is the Ship of Theseus, we might try more modifications. We could suppose that the replacement parts were wood instead of iron and only replaced after the original ones looked like they might wear out one by one. If we still met resistance we may also point out that any number of objects including ourselves go through and survive the sort of process we are supposing the ship of Theseus underwent. Presumably none of the molecules in my body are the same as when I was born. We all survive the continuous replacement of worn out cells and yet we believe that we persist from moment to moment. It is certainly reasonable that the ship of Theseus survives the slow replacement of worn out parts as well. Any resistance to this conclusion after an appropriate amount of tweaking would most likely be theoretical and not intuitive at this

point and we are justified in believing that there is no obvious solution to the puzzle in whatever form it takes.

In what follows, I will introduce one solution to the puzzle of the Ship of Theseus and give two reasons for rejecting it. I do not believe my arguments make knockdown cases but, when taken together and in conjunction with my own solution to the puzzle which I will introduce during the course of the second argument, I believe they provide strong reasons to deny that the solution about to be introduced is a good solution.

II. Indeterminate Identity

One contemporary solution to identity puzzles like the one introduced above is to say that identity claims can be indeterminate. Throughout what follows I will be talking exclusively about one such theory as spelled out by Terence Parsons in his forthcoming book Indeterminate Identity: Metaphysics and Semantics. Consider the puzzle above. For convenience, let us call the original ship '*t*' (for Theseus), the iron ship '*i*' (for iron) and the wooden ship '*w*' (for wood).[1] Given that the past two and a half thousand years have not yielded a definite solution to whether or not *i* or *w* is identical to *t*, we have reason to believe, according to Parsons, that no traditional solution will ever be found. Parsons' thesis is that there is no determinate answer to the question posed by the puzzle. Instead, we have metaphysical indeterminacy in the identity relation between *i* and *t*, and between *w* and *t*. That is, it is indeterminate whether *i* is identical to *t* and it is indeterminate whether *w* is identical to *t*. It is important to note that Parsons is not at this point expressing the belief that the puzzle is unsolvable. Instead, he is noting that there will be no adequate *traditional* solution which states determinately that $i=t$ or $w=t$. Instead, he believes he has solved the puzzle by claiming that the identity statements are indeterminate and thus the puzzle goes away.

A claim is indeterminate when it is neither true nor false. Since the truth value of a claim is determined by the facts in the world, a claim that is indeterminate will be one that the facts leave undetermined and thus not true and not false. Consider the predicate ϕ when it is asserted of x. The claim ϕx is indeterminate when the structure of the world does not determine whether ϕx is true or false. The following provides an example that I

believe is not too far from what Parsons has in mind. Suppose 'ϕ' stands for the property 'is red'. Also suppose that we have an object that is some sort of odd color, not quite red and not quite not red, that is, it is a borderline case. Assume for the sake of discussion that this is not simply a matter of our being unable to figure out whether or not the book is red. (In other words the issue is not an epistemic one in that no more details of the situation will help us decide that the book is definitely red or definitely not red.) In this case, the world underdetermines the truth of the claim "the book is red". This is a case in which the book only has the property of being red indeterminately. Consider also the property of being bald. With this property, there is no sharp boundary between those who are bald and those who are not bald. With these borderline cases the predicate "is bald" neither seems to apply nor not apply. Indeterminacy explains this situation by allowing some expressions to be neither true nor false. In the case of the person who is on the borderline between being bald and not bald, we declare that it is indeterminate whether or not he is bald. That is, he possesses the property of being bald only indeterminately.

It is easy to see how allowing identity claims to be among the kinds of claims that can be indeterminate will help solve the puzzle above. If it is indeterminate whether *i* is identical to *t* and whether *w* is identical to *t*, the puzzle simply disappears. That is, if all the facts of the world do not determine either way whether or not $i=t$ or $w=t$ then we have gone as far as we are able and there are no more questions to be asked. Initially one might react by complaining that this approach seems like giving up, that we just have not looked hard enough, but this is not the case. According to Parsons, we may suppose for the sake of argument that all the facts are available to us, and that all of these facts

underdetermine the identity claims made above. If we suppose that we have all the facts, and there is no reason not to do so, we can say that there is nothing about the view that looks like giving up. As mentioned, when a claim is indeterminate, we are not simply in an epistemic position in which we lack information. Instead, no more information will be relevant and the facts underdetermine the truth value of the claim at hand.

It is worth noting in passing that Parsons does not consider indeterminacy to be a third truth value.[2] Instead it is a lack of truth value, though it can lay claim to being a truth value *status* in addition to truth and falsity. Parsons takes this stance simply so that he does not have to explain a third truth value since doing so would involve considerations beyond the scope of his book.[3] This amounts to what is essentially a three valued logic of indeterminacy. With three truth value statuses, Parsons can create a logic that functions much like what we commonly consider a three valued logic without the need to explain what it would be like for indeterminacy to actually be a truth *value*.

The theory of identity Parsons endorses is as follows

> *x* is determinately identical with *y* if and only if: every property that *x* determinately possesses *y* also determinately possesses (and *vice versa*) and every property that x determinately does not possess *y* also determinately does not possess (and *vice versa*).

> *x* is determinately not identical with *y* if and only if: there is some property that x determinately possesses that *y* determinately does not possess, or some property that *x* determinately does not possess that *y* determinately possesses.

> It is indeterminate whether *x* is identical with *y* if and only if *x* and *y* are neither determinately identical nor determinately not identical. This will happen when 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* possess it, or *vice versa*.[4]

On this account, identity is construed as coincidence of properties with a clause added for cases of indeterminacy. This is very closely related to the traditional understanding of identity known as Leibniz's Law according to which if "two" objects are identical "they" have or lack all the same properties. However, above this has been changed to a biconditional and altered to account for indeterminacy. On the above account, taking into consideration indeterminacy, if *x* and *y* have all their properties in common "they" are identical. If they determinately differ in some properties, they are not identical. And if *x* determinately has or lacks a property that *y* only has indeterminately, or the other way around, then it is indeterminate whether *x* and *y* are identical. Parsons stresses that the properties under discussion must be genuine properties in the world. That is, they must not be merely conceptual properties. More will be said about this later.

Returning to the story of Theseus' ship, we are now in a better position to understand the nature of the indeterminacy that holds between *i* and *t* and between *w* and *t*. There are, in fact, a number of properties that *t* has but that *i* and *w* only have

indeterminately and *vice versa*. For instance Parsons focuses on the property of being in a certain location at a certain time. *t* determinately possesses the property of having been at a specific shipyard before it ever set sail and before it ever underwent the project that led to its unusual future. *i* and *w*, however, only possess this property indeterminately. Similarly, *t* determinately possesses the property of having set sail for the very first time on a specific date. Again, both *i* and *w* only possess indeterminately the property of having originally set sail for the very first time on that same date. To see why this is so, consider the stories behind *i* and *w*. Since the facts of the matter leave undetermined whether or not *i* is identical to *t*, the facts also leave undetermined the date on which *i* first sailed. If *i* were determinately identical to *t*, the facts would determine that *i* did set sail that the very moment *t* set sail. Similarly, if *i* were determinately not identical to *t*, the facts would probably determine that *i* set sail at a different time. However, the facts leave open the date on which *i* first set sail. The same goes for *w*. We should note, too, that even though there are a number of properties determinately possessed or lacked by one ship and had only indeterminately by the other in the example, this is not problematic. It is merely a consequence of the theory and makes a good deal of sense. If at time t_1 an object *o* experiences an event such that it is indeterminate whether *o* is identical to *p*, then any thing that is true of *p* after that time will only be indeterminately true of *o*.

It is worth noting in passing that, as Parsons points out, there are some characteristics of our ordinary conception of identity that do not hold in those cases in which it is indeterminate whether something is identical to another thing. For instance, when identity is indeterminate, it is not transitive.[5] In the case of the ships, for example,

it is indeterminate whether *t* and *i* are identical and it is indeterminate whether *t* and *w* are identical but it is not indeterminate whether *i* and *w* are identical since they are determinately not identical. This is not necessarily a problem for Parsons' theory since it is simply a consequence of accepting indeterminate identity and he believes we have good reasons to take this step.

II.I The Logic of Indeterminacy

As we noted above, when indeterminacy is introduced in the picture as a third truth value status, we end up with a logic very much like a three valued logic, the only differences being semantic rather than inferential. Parsons employs the logic of Łukasiewicz as his model.[6] He also stresses some things that are peculiar to three valued[7] logics that are not found in a classical bivalent logic. First, *reductio* arguments, in which an assumption is proven false by deriving a contradiction, do not work in the traditional manner. Consider Parsons' example: "If you assume A&~A as a hypothesis, you can easily infer a contradiction from it (itself). Classical [*reductio]* would then let you infer ~(A&~A). But if A lacks truth value, so does ~(A&~A), so you are not allowed to infer that."[8] Instead, a *reductio* will only allow you to infer that it is not determinate that A&~A.

At this point we must note two new one-place logical operators. The first is the 'truth' or 'determinate' operator 'Δ'.[9] When this operator is place in front of a true sentence, the new sentence is also true. When it is placed in front of a sentence that is false or indeterminate, the resulting sentence is false. The truth table, then, is

P	ΔP
T	T
F	F
I	F

The other operator is the indeterminacy operator '∇'. When this is placed in front of a sentence that is neither true nor false (that is, indeterminate), the new sentence is true. Conversely, when the operator is placed in front of a true sentence or a false sentence, the result is a false sentence. The truth table for the indeterminacy operator is:

P	∇P
T	F
F	F
I	T

II.II Evans' Objection and the Contraposition Reply

Gareth Evans, in his article entitled "Can There Be Vague Objects"[10], posed what has become the most common and most frequently discussed objection to the indeterminacy of identity.[11] In what follows I will discuss the objection itself and outline the reply made by Parsons on behalf of indeterminate identity.

Evans maintains that the theory of indeterminate identity leads to contradiction whenever there is an actual case of indeterminate identity. He argues that if we suppose

there is an instance of an identity claim that is indeterminate, we are able to show that the things supposed to be indeterminately identical are actually determinately not identical, contradicting the original supposition. That is, if it is indeterminate whether $x=y$, we can show that it is *not* indeterminate but false that $x=y$. Evans argues as follows. Suppose we have an indeterminate identity claim – that is, suppose it is indeterminate whether a is identical to b (symbolized as $\nabla(a=b)$). Consequently, it is a fact about b that b has the property of being indeterminately identical to a ($\lambda x[\nabla(x=a)]b$).[12] However, since a is determinately identical to a ($\Delta a=a$), it is not the case that a has the property of being indeterminately identical to a ($\sim\lambda x[\nabla(x=a)]a$). From Leibniz's Law, since b has a property that a does not have, we may conclude that it is not the case that a is identical to b ($\sim(a=b)$). Finally, this conclusion may be strengthened to become the claim that it is determinate that a is not identical with b ($\Delta\sim(a=b)$) and this is inconsistent with the original supposition that it is indeterminate whether a and b are identical (that is, since ∇ and Δ are duals[13], $\Delta\sim(a=b)$ is equivalent to $\sim\nabla(a=b)$ giving us, together with Evans' first premise, $\sim\nabla(a=b)$ & $\nabla(a=b)$). For clarity here is the argument:

1. $\nabla(a=b)$	Assumption
2. $\lambda x[\nabla(x=a)]b$	Abstraction from 1
3. $\sim\lambda x[\nabla(x=a)]a$	Abstraction from the truism that $\sim\nabla a=a$
4. $\sim(a=b)$	From 2, 3, and Leibniz's Law
5. $\Delta\sim$(a=b)	From the definition of Δ
6. $\sim\nabla(a=b)$	Law of Duals
7. $\nabla(a=b)$ & $\sim\nabla(a=b)$	&-introduction from lines 1 and 6 (Contradiction)

This argument is powerful in that if successful, it demonstrates that it is impossible to hold that identity can be indeterminate since doing so in a given instance leads to the conclusion that identity is not indeterminate. The standard reply made by those who hold that identity can be indeterminate was, for a long time, that while Evans appealed to Leibniz's Law in line four to justify his inference from the claim that *b* has a property that *a* lacks to the nonidentity of *a* and *b*, Leibniz's Law has nothing to say about this situation.[14] Instead, Leibniz's Law only allows inferences of the following form:

LL:
From: $a=b$
And: Fa
Infer: Fb

Evans, however, makes an inference using the Contrapositive of Leibniz's Law which is of this form:

CLL:
From: Fa
And: ~Fb
Infer: ~(a=b)

The argument against Evans, then, goes as follows. Evans' argument uses CLL. CLL is invalid, however, and since any argument that makes use of an invalid inference pattern will fail, Evans' argument fails. Since no one will dispute that Evans uses CLL and that

an argument will fail if it uses an invalid inference pattern, Evans' objectors merely need to establish the invalidity of CLL.

In order to understand the argument for the invalidity of CLL we need to be clear about the semantics we are using and the notions of validity and invalidity therein. First, Evans' argument makes use of a three-valued semantics like the one we discussed above with the truth-values true (T), false (F), and indeterminate (I). In addition, validity has its traditional (classical) meaning – an inference pattern or argument is valid if and only if every valuation on which the premises are true is a valuation on which the conclusion is also true. Invalidity, however, is not as straightforward. An inference pattern or argument is invalid if and only if there is a valuation on which the premises are true while the conclusion not true. However, the conclusion may be not true in two ways – it may be false or it may be indeterminate. So even if there is a valuation on which the premises are true and the conclusion indeterminate, the inference pattern is invalid.[15]

In order to block Evans' argument, those defending indeterminate identity with the contraposition reply must show that CLL is an invalid inference pattern. That is, they must demonstrate that when the premises of the inference are true the conclusion can be either false or indeterminate. This is done by asserting that contraposition is not a valid transformation rule in a three-valued semantics and since validity is not preserved under contraposition, CLL, being the contrapositive of LL, is invalid.[16] To prove the invalidity of contraposition in this system of three-valued logic, consider the following inference[17]:

From: A

Infer: $\sim\nabla A$

As it is, the inference is valid. The contraposed version, however, is not:

From: ∇A

Infer: ~A

Clearly we may not conclude ~A from ∇A for when it is indeterminate that A, it is not the case that A and it is not the case that ~A since A is neither true nor false. That is, when the premise of the inference is true the conclusion is not true. Thus we have a counterexample to contraposition in our three-valued semantics.

Unfortunately, however, we are not allowed to conclude that CLL is invalid simply because it is the contrapositive of LL and contraposition is invalid in our semantics. To draw such a conclusion would be fallacious. As hinted earlier, the contraposition reply was prominent for a time but presumably, though he does not mention it explicitly, it was reflections of the following sort that led Parsons to change his reply to Evans in his book (about which more will be said in a moment). I offer the following as an example of a valid inference that survives contraposition in a three valued logic, consider a simple '&-elimination':

From: (A&B)

Infer: A

This inference is valid in three-valued logic. Any valuation on which the premise is true must be a valuation on which the conclusion is also true. Now consider the contraposed version:

From: ~A

Infer: ~(A&B)

Depending on how we set up the truth tables for our semantics, this will also be valid. Briefly, assume the premise is true (since, as we noted above, to prove an inference is invalid we need a counterexample in which the premise(s) is (are) true and the conclusion not true). It follows from ~A that A is false (F) leaving three possibilities for B (T, F, and I). On at least two standard semantics for three valued logic (Łukasiewicz's semantics and Kleene's semantics), the truth table for conjunction with one false conjunct is the following:

A	**B**	**(A & B)**
F	T	F
F	F	F
F	I	F

As we noted above, when the premise, ~A, is true, A is false. Additionally, we see from the truth table that every valuation on which A is false is a valuation on which the conjunction (A&B) is false. And since ~(A&B) is true whenever (A&B) is false we may infer that ~(A&B) is true on every valuation on which A is false. This is to say that the conclusion of the contraposed '&-elimination' is true whenever the premise is true and there is no valuation on which the premise of the inference pattern is true while the conclusion not true. In other words, the contraposed '&-elimination' is valid.[18]

We may conclude from this discussion that the contraposed versions (perhaps inverted versions would be a better term) of some valid inferences may be invalid but that the inverses of other valid inferences are valid. Note that this is not the same as saying that contraposition as a transformation rule is valid in some cases since clearly it is not. For a rule such as contraposition to be valid there must be no counterexample to its use but we have such a counterexample above in the case of the &-elimination. However, the inverted '&-elimination' clearly demonstrates that we must examine the inverses of inferences independently of contraposition to determine, perhaps even on a case by case basis, whether or not they are valid.[19] It is at this point that we may seriously question the contraposition reply to Evans' argument. Simply to declare that Evans may not use CLL in his argument because contraposition is invalid is inadequate. Instead, to make the contraposition objection effectively one must first note that contraposition is invalid and consequently, CLL is not valid merely because LL is. In order to object seriously, then, indeterminate identity theorists must demonstrate independently that CLL is invalid.

If we examine again Parsons' account of identity given above (pages 5-7) we notice that according to his own version of identity, CLL is valid. Assume that *a* has the property F and *b* lacks the property F (the first two premises of CLL). Given Parsons' account of identity, *a* must definitely differ from *b*. It cannot be indeterminate that *a* is identical to *b* since there *is* a property, namely F, that *a* has and *b* lacks. There is no way the premises of CLL could be true while the conclusion false or indeterminate on Parsons' account which is to say that he must uphold the validity of CLL and may not make the contraposition reply to Evans' argument.

To summarize briefly, I have argued that the traditional response to the Evans objection is flawed. The contraposition reply states that Evans' argument is in error when it mistakenly justifies one of its inferences by appealing to LL when instead CLL is required to make the inference. The contraposition reply then notes that contraposition is not a valid transformation rule in the three valid semantics employed by the argument and then declares that CLL is invalid. My argument has shown that while contraposition is not a valid transformation rule, CLL is valid. Consequently, the contraposition reply to the Evans argument does not work.

II.III The New Reply to Evans

As indicated, Parsons no longer makes the contraposition reply to the Evans argument in his forthcoming book. He correctly notes that if two objects disagree with respect to a given property then "they are *by definition* determinately not identical."[20] This means that if a is or has F, whereas b does not, we may conclude that they are not identical – precisely what CLL states. So in order to save his theory Parsons declares that there must be some way to show that CLL cannot be applied in Evans' argument. He accepts that CLL is valid when applied to properties. That is, from Fa and ~Fb we may derive $\sim a=b$ if 'F' expresses or denotes a property and this appears to be precisely what Evans was doing in his argument. Evans did, after all, take care to note that "[$\nabla(a=b)$] reports a fact about b which we may express by ascribing to it the *property* '$\lambda x[\nabla(x=a)]$'."[21] Parsons' reply is to deny that the abstract expresses a property. That is, Parsons denies that there is a *property* of "being indeterminately identical to a". While

he must allow that CLL is valid when applied to properties, he need not allow that CLL is valid when we have F*a* and ~F*b* and 'F' does not denote or express a property. Parsons claims that given the force of the Evans objection we "have a choice to make: either deny that indeterminate identity is possible or deny that abstracts covertly employing quantification over properties (such as the one above) always pick out a property from among the ones quantified over in the definition of identity. *Either option is consistent*."[22] In other words we must either declare the Evans objection valid or we must deny that the abstracts used in the argument stand for or express properties. The latter stance is Parsons' own view.

Is Parsons' reply to the Evans objection question begging? He claims it is not. While Parsons believes that CLL is valid when applied to predicates that stand for properties, he denies that the abstract property of "being indeterminately identical to…" is a genuine property and concludes that it does not fall under the scope of CLL. The issue of question begging might be raised on two fronts. First, one might accuse Parsons of begging the question when he declares that CLL is not valid when applied to predicates that do not stand for properties. Second, one might raise the issue of question begging when Parsons declares that the abstracts do not express genuine properties. In the first case, Parsons turns the charge around and holds that it is equally question begging to declare that CLL *is* valid when applied to predicates that do not stand for properties.[23] In the second case, Parsons might say that he has given an argument for the claim that the abstract does not stand for a genuine property. More will be said about the latter issue in the next section.

III. Argument One

My first objection to indeterminate identity will be, in essence, a defense of the Evans argument. Parsons himself believes that the only problem with the argument is that the abstracts do not express properties since there is no property of "being indeterminately identical to…". In what follows I will argue against Parsons and show that if we accept indeterminate identity, we must also accept that the controversial property in question is a property in the world. If I am right, the Evans argument works and indeterminate identity is an inconsistent theory.

Earlier we noted that one might accuse Parsons of begging the question by asserting that the abstract property of "being indeterminately identical to …" does not express a real property.[24] However, given the stalemate between those who believe identity can be indeterminate and those who do not and what Parsons believes to be the general plausibility of indeterminate identity, perhaps Parsons' move is not question begging after all. I maintain, however, that we have independent reasons for believing that the property of "being indeterminately identical to …" is a genuine property in the world.

D.H. Mellor holds properties to be "identified a posteriori by scientific theories, construed as Ramsey sentences: i.e., as saying for example, that there are properties C, F, and G such that in C-circumstances all F-events have such-and-such a chance of being followed by G-events."[25] While this is a bit more specific than we need, the idea is that we identify properties empirically by a scientific examination of the world to see if the posited entity can be found. Following the Wittgensteinian dictum to "look and see," I

propose we do just that – examine the world to see if we can find instances of the property of "being indeterminately identical to…". If, on a naïve view, properties are simply attributes, characteristics or features of a thing, then we may reasonably attribute to *i* a feature that *t* does not have. More specifically, *i* stands in a certain relation to other things in the world that *t* does not – the indeterminate identity relation to *t*. Further, a characteristic peculiar to properties is that they may be instantiated by many objects. This is, after all, what gives rise to the problem of universals. Does the posited property of "being indeterminately identical to…" have this peculiar feature? Certainly. If we look at what *i* and *w* have in common we see that beyond having the properties of being ships, having a rudder, floating on water and so on, there is one other important relation *i* and *w* share: the relation in which they stand to *t*. If we accept that identity can be indeterminate, *i* and *w* are indeterminately identical to *t*. Intuitively this seems to be a genuine, real feature of *i* and *w*.

The question for Parsons is, given that the abstracts look and act like properties, could they be anything else? Rosanna Keefe suggests two ways in which a predicate might not express a property.[26] She does not explicitly state that the first of the two ways is applicable to indeterminate identity claims but whether she believes it or not, someone else might. This first suggestion is that predicates that do not express a property might be like those abstracted from psychological contexts. Take the case of Cicero and Tully. Smith might believe that Tully was a famous orator but Cicero was not and one might offer the following argument to establish the false conclusion that Cicero was not identical to Tully:

1. Tully has the property of being believed by Smith to be an orator.

2. Cicero does not have this property.

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3. Therefore, Cicero is not identical to Tully.

Many people believe this argument shows that abstracting from psychological states does not guarantee propertyhood. For if we could abstract in this manner we could show any number of things which are identical to themselves to be not identical. However, we need not accept this conclusion. Instead, by denying premise two, the argument will not establish the conclusion. The fact of the matter is that Cicero and Tully *are*[27] identical. Smith actually *does* believe of Cicero that he is an orator only he is not aware of the fact. If one holds a Millian theory of the meaning of names, one typically holds that names are substitutable in psychological, as well as modal, contexts *salva veritate* and given this position one is fully justified in rejecting premise two of the argument above.[28] If one makes this move, and it is reasonable to do so, one need not disallow predicates abstracted from psychological contexts from expressing properties since we do not end up multiplying entities in the manner Keefe implies. Suggesting that the property of "being indeterminately identical to…" does not stand for a property in a manner analogous to the way in which abstraction from psychological states appears not to guarantee propertyhood is not particularly forceful since it is at least controversial that abstracting from psychological states does not guarantee propertyhood.

The second way Keefe suggests that a predicate might not express a property is one in which the predicate expresses "a mode in which [an object] has a property".[29]

This statement is puzzling. Why should having a property in a certain way not be a further property? What is a mode in which an object can have a property? I take it from the discussion that follows her statement above, that a mode in which an object has a property would include as examples necessity and possibility. Take, for example, the following sentence: It is necessary that the number two is even. Why is it that "being necessarily even" does not, or could not express or stand for a property? Consider squares. As a type, squares necessarily possess four sides. That is, having four sides is a property held necessarily. Does it not seem very plausible if not entirely correct to say of squares that they have the property of necessarily possessing four sides? Certainly it is only contingent whether each individual figure that happens to be a square is a square in the sense that when Mary draws a square she might have drawn something else, say a triangle. This does not mean that the figure she happened to draw with four equal sides and angles might not have been a square, but instead that she might have drawn a figure with only three equal sides and angles. However, it is not merely contingent that squares as a kind of entity are necessarily even. In the same way, it is not contingent that gold as a substance has as its atomic number 79. We may abstract from this that gold has the property of necessarily being atomic number 79. All we have done is form a predicate that expresses a mode in which something has a property. There is no reason to believe that this is not a further property since necessarily having four sides seems to be a genuine quality or attribute of the type square. Since there seems to be no reason to doubt that the abstract is a property in this case we have good reason to doubt that likening it to the property abstract "being indeterminately identical to…" will help demonstrate that this latter predicate fails to express or stand for a property.

Consequently, Keefe's suggestions as to what the abstracts might express fail to provide a plausible account of what it might mean for a predicate, especially a predicate that looks and behaves in most ways like a property, not to stand for a property.

Parsons notes that there might be "two sorts of things commonly called 'properties': real things in the world on the one hand, and parts of our conceptual apparatus for representing the world on the other."[30] The former is what he calls "worldly properties" and the latter "conceptual properties." It is worldly properties that Parsons believes are relevant to identity. Accordingly, if we hold that property abstracts must express properties Parsons would allow us to do so but would deny that they express worldly properties. Instead, he claims, they would have to express conceptual properties. However, could the supposed property of "being indeterminately identical to…" merely express part of our conceptual apparatus for representing the world? Answering this question brings us back to Mellor's comments about properties being identified *a posteriori*. Parsons has given us an argument that we might interpret as an *a priori* argument against the worldly property of being indeterminately identical. It goes as follows:

1. Identity can be indeterminate.
2. If the abstract "being indeterminately identical to…" expresses a property then identity could not be indeterminate.

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3. The abstract "being indeterminately identical to…" does not express a property.

This argument demonstrates the apparent stalemate between those who uphold the Evans argument and indeterminate identity theorists. It is difficult to believe, though, that an argument of this sort could really be an effective tool for discovering, or in this case discounting, worldly phenomena since that seems to be a task for empirical study. My proposal above was that we should instead try to find the entity in the world since that seems to be what will decide the matter either way. This is not to say that we can never have an *a priori* argument against the existence of a property. For example we may easily argue on *a priori* grounds that the property of being a round square is not a real property of the world. Round squares are logically impossible since there is an inherent contradiction in the property itself. Could Parsons justifiably assert that the property of "being indeterminately identical to ..." is logically impossible or contradictory in some way? In the case of the round square, there was an internal inconsistency that allowed us to infer on *a priori* grounds that there is no such property. There is a difference, however, between the argument against round squares and the argument against the property of "being indeterminately identical to..." in that the latter does not have the same sort of internal inconsistency. This distinction is important and explains an important issue regarding what we should look for in the world given a theory of what there is in the world. If we know a property is impossible *a priori*, we know not to look for it in the world. That is, if a property is internally inconsistent in the way that the property of being a round square is, we know we will never find something with this attribute. If, on the other hand, a property (or lack of one) is part of a general theory, then not only are we justified in looking for it but we ought to do so in order to support a

theory empirically. If we examine Parsons' theory, we notice the following statements regarding what sorts of entities we will and will not find in the world:

(1) There are instances of indeterminate identity.[31]

(2) It is not the case that there is a property of "being indeterminately identical to…".

(1) is a claim about what we will find in the world and (2) is a claim that we will not find an entity of a certain sort in the world. As responsible thinkers, we have a duty to check to make sure Parsons' is correct so we should examine our world to determine whether or not the property he claims is not present is in fact missing. Obviously, I maintain that it is not absent since if we hold that identity can be indeterminate, and we examine the story of the Ship of Theseus, we find revealed a case of genuine indeterminate identity. If *i* is indeterminately identical to *t* there seems to be no reason to deny the property of "being indeterminately identical to…".

In defense of the belief that there is a genuine worldly property of indeterminate identity, it is worth noting that there is a tension between (1) and (2). (1) states that we will find in the world examples of indeterminate identity. (2), on the other hand, states that there is no property of "being indeterminately identical." It is difficult to see how it could be the case that there is such a thing as indeterminate identity but not a property of indeterminate identity. This is tantamount to say that *x* stands in a relation R to *y* yet it is not the case that there is a property of relating in an R way to a given object.

To make a stronger case that the "property of being indeterminately identical to…" is a genuine property in the world recall that Parsons believes that what makes an

identity claim indeterminate is that there are not enough facts to say that the claim is either true or false. There is something missing in the world; there are not enough facts to go around. However, this seems to be a further fact in the world. In other words, there seems to be a fact that the other facts in the world leave undetermined whether or not *i=t* and whether or not *w=t*. We may reasonably infer from this further fact that there is some genuine property of "being indeterminately identical to…" in the world.

In what has just preceded I have argued that if we accept that identity can be indeterminate, then there is a genuine property of "being indeterminately identical to…" in the world. One might reasonably wonder why I would defend the existence of such a property if I believe that identity cannot be indeterminate. In reply, I should hasten to add that I do *not* think there is a property of "being indeterminately identical to…". Rather, the point has been that Parsons has offered a theory that includes claims (1) and (2) above. If we recall his reasons for positing (1)[32] we should note that Parsons believes that identity claims can be indeterminate in part because of certain evidence – the lack of a good solution to identity puzzles such as that of the Ship of Theseus. He maintains that since "so many of the identity puzzles have remained unsolved for centuries, some observers have been led to speculate that [the puzzles pose] questions that have no answers"[33] and his approach has been to say that the appearance of lacking an answer is evidence that the identity statements are indeterminate. (Note that Parsons is not arguing that the puzzles have no answer. Rather, he believes that they have no traditional answer and he has posited the indeterminacy of identity to provide a non-traditional solution.) What Parsons has done is to take a condition of the world as evidence for a certain view. It is only in defense of the view expressed in (1) that Parsons posited (2). In response,

my approach has been to suppose for the sake of argument that Parsons is right and state a conditional claim that if identity can be indeterminate, then we must look for instances of objects possessing the property of "being indeterminately identical to…". Interestingly, it is the very evidence that Parsons cites as support for his view, namely the unsolved puzzles, that provide the evidence for the property of indeterminate identity. I agree that the puzzles are up to this point unsolved but my point has been that this is not evidence for indeterminate identity. Rather if Parsons is going to use the puzzles as support for his theory, I am justified in using them as evidence of the property needed to defeat the theory since I am merely taking what he believes to be a genuine entity in the world, indeterminate identity, and abstracting from it. My position is that if there are true indeterminate identity claims, then there is a property of "being indeterminately identical to…" and if there is a property of indeterminate identity, the Evans argument succeeds in showing that as a theory indeterminate identity is inconsistent. All I need to do is support the conditionals. I happen to believe that there is no indeterminate identity.

Finally, it is easy to see why Parsons denies that there is a property of indeterminate identity since such a property would show his theory to be internally inconsistent. However the simple assertion that there is not such a property lacks the force necessary to establish the view especially when we turn to the world to find the property.

IV. Argument Two

In order to understand the second objection to indeterminate identity, let us return to the puzzle of the ship of Theseus and modify it somewhat. Suppose that ten years passes between the time that the preservation project is completed and the occurrence of the (re)construction of the wooden planks and also suppose that the planks are stored in different locations throughout the world. During that interim period, most people would agree that the iron ship is determinately the ship of Theseus. This seems likely since we believe that objects survive change and that some objects even survive the entire replacement of their parts. As pointed out in section I, you and I have survived such changes in our composition. The consequence, though, is that once the (re)assembly of the wooden pieces takes place, the iron ship will no longer be determinately identical to the original ship. But this means that somehow by merely placing together a bunch of wooden planks, possibly even miles away, "two" objects that stand in the identity relation to each other now fail to stand in that relation. What, then, causes this change in the identity relation that holds between *i* and *t* by the mere appearance of *w*? I hope to show in what follows that indeterminate identity cannot account for this phenomenon in a satisfying manner though another theory (which I do not believe has been endorsed in print) can.

At the end of the story of the ship of Theseus, Parsons believes that the iron ship is indeterminately identical to the original ship and that the reconstructed ship is indeterminately identical to the original ship. He also believes that the iron ship and the reconstructed ship are determinately not identical. I cannot speak for Parsons and other

proponents of indeterminate identity but I believe that they too would have agree that in the interim period between the end of the replacements and the appearance of the wooden ship, the iron ship is determinately the ship of Theseus. Assume that they do assent to this belief since the decision not to do so would most likely be made on theoretical and not intuitive grounds. How might Parsons account for the change in truth value of the identity statement between *i* and *t* by the time the story is completed? There is nothing in the theory that speaks to this question. One might suppose that the introduction of the reconstructed ship affects the relation holding between the iron boat and the original ship. But how might this work? Suppose that *i* stands in relations $R_1 \ldots R_n$ to *t*. Included among these relations is the identity relation. If *i* determinately stands in this relation to *t* at a given time index, what could account for *i*'s failing to determinately stand in this relation at a later time index, that is, when *w* has been (re)constructed? We might suppose that entering a new relation to both *t* and *w* at a later date might somehow alter the previous relation such that *i* and *t* *were* determinately identical but are no longer. This does not make much sense however, because nothing about *i* and *t* has changed. They stand in all the same relations relevant to identity that they once did and yet for some reason they are no longer determinately identical.

This argument bears a strong similarity to an argument in the literature against what is called the "closest continuer theory of identity." According to the closest continuer theory, if a later object *r* is identical to an earlier object *q*, then there must be no possible better candidate than *r* for being identical to *q*. That is, in a possible world if *q* exists at time t_1 and r exists at time t_2 and there is a relation $C_{\alpha,\beta}$ which stands for the relation that β stands in to α when β is the best candidate for identity for α then:

$q=r \rightarrow \sim\exists x(Cqx \;\&\; \sim x=r)$

If we apply this theory to the case of the Ship of Theseus intuitions in the literature have been that $i=t$ since i is a better candidate for identity with t than is w.[34]

Harold Noonan has responded to the closest continuer theory by demonstrating some of its absurd consequences and defending what he calls "the only x and y principle."[35] According to this principle, given the objects q and r above and the relation $C_{\alpha,\beta}$, if $q=r$ it does not depend on whether or not there are any better candidates. Or:

$q=r \rightarrow \Diamond\exists x(Cqx \;\&\; \sim x=r)$

Although not explicitly stated, what lies at the heart of this notion is that identity is an intrinsic relation whereas the property of being the best candidate ($C_{\alpha,\beta}$) is an extrinsic relation. This is the sentiment I voiced above when I noted that it would be absurd for w's coming in to existence to affect the identity relation held between i and t. In this sense I employ a principle very similar to the only x and y principle. However, since my concerns involve indeterminacy, we need to modify the only x and y principle to take this into account. I propose that given q and r above, if it is determinate that $q=r$ then for any object that is not identical to r, that object may stand in any relation to q, excluding of course the identity relation, without it affecting the determinacy of identity between q and r.[36] This conflicts with Parsons' theory since he is committed to the introduction of the

(re)constructed ship and its relationship to the original ship somehow affecting the identity between *i* and *t*.

There are only two ways that I can see for Parsons and the theory of indeterminate identity to account for the intuitions that conflict between the middle and ending of the story of the ship of Theseus (that the iron ship is identical and then later indeterminately identical to the original ship).[37] First, Parsons could make an epistemological defense and say we just did not know that *i* and *t* were merely indeterminately identical and that only when *w* is pieced together do we realize this. The problem with that response is that it does not fit with our starting data. If *i* and *t* were indeterminately identical all along we would have to suppose that even if *w* had not been assembled, then they would still be indeterminately identical. But this goes against our intuitions. If *i* and *t* are indeterminately identical then we might reasonably suppose that nothing survives change. To see this consider our own situation: we possess none of the cells with which we were born and yet we are perfectly comfortable saying that we have survived the continual and complete replacement of all our parts.[38] In this case we are in much the same situation as *i* and *t*. If these latter two are only indeterminately identical, we must be only indeterminately identical with our infant selves. Perhaps more convincingly, consider an antique table that has been passed down from generation to generation. Suppose that along the way, a leg breaks and is replaced (the broken leg is destroyed). Suppose that later another leg breaks and is also replaced (again the broken leg is destroyed). Assume that this goes on until there is nothing left of the original table. If this is a sufficiently slow process that takes three hundred years, intuitively most of us would not be able at any stage to say that the repaired table is not the same as the table that was being

repaired. But again this is just like the first half of the story of Theseus' ship. If we just did not know that it was indeterminate that *i* is identical to *t* all along, then we must just be unaware that each time the table is repaired the 'new' table is indeterminately identical to the table that was 'repaired'. This just does not fit with our intuitions, however, and we must be wary of such a solution.

The second possible response indeterminate identity theorists might provide would be one in which the (re)construction of *w* somehow affects one or more of the relevant relations $R_1 \ldots R_n$ that hold between *i* and *t*. A suitable analogy might involve magnets. Magnet one (m1) might be attracted to magnet two (m2) to degree n. When magnet three (m3) is brought close to m1, the attraction between m1 and m2 is lessened. Could something similar happen with the relations between *i* and *t*? Could the very building of *w* alter one or more of the relations that hold between *i* and *t* in such as way as to affect the identity between *i* and *t*? This seems unlikely since we are not dealing with a phenomenon like magnetic attraction in which extrinsic, contingent relations determine the level of attraction between m1 and m2 . In order to make this argument work for identity one would likely need good support for some extrinsic relation between *i* and *t* behaving in such a way as to affect the intrinsic identity relation. As far as I know, no one has offered any argument of this type and consequently no one has attempted to provide support for such a relation. Given that this response and the epistemological response seem untenable, I see no suitable way for the theory of indeterminate identity to account for the fact that we have a different intuition when only part of the story of the Ship of Theseus is told than we do when the whole story is told. If I am right, there is no way for indeterminate identity to account for this apparent shift in our beliefs.

As philosophers, we try to accept only those theories that we believe best account for the data. We have seen that there is one datum for which indeterminate identity cannot account and in what follows I will offer a theory that *does* account for the phenomenon under discussion. Hopefully, if this theory successfully explains the situation under question and can be generalized to handle other identity puzzles[39], we will end up with an attractive alternative to indeterminate identity.

Under the view I endorse, the identity predicate is ambiguous between any number of different interpretations. In a chapter dedicated to rival theories, Parsons notes that no one has offered any solution to "identity puzzles that result from clarifying the identity predicate itself," though he goes on to construct a view that might be suggested by an article by David Lewis.[40] The view I endorse is in fact closely related to one offered by Lewis[41] though not the one that Parsons examines. I believe that when we say that $x=y$ we can mean a number of different things by identity. Two common meanings of identity are "is spatiotemporally continuous with" and "is made of the same stuff as". Let us call these $=_1$ and $=_2$, respectively. When we say that $x=_1y$, we mean that x and y share a spatiotemporal history; when we say that $x=_2y$, we mean that x and y are made of exactly the same material arranged in either the same way or another way altogether.

Applying the above theory to the puzzle of the ship of Theseus yields enlightening results. Consider the identity between i and t. If we read it as $i=_1t$ we may conclude that i is identical with t. This is because the two share a continuous history. All of the spatiotemporal boundaries of i and t overlap. The same does not hold of w and t, however. Since w is created after t has undergone its preservation they never even overlap. t was created at a certain time and w only entered existence long after t's

creation. Consequently, reading the identity between *w* and *t* as $w =_1 t$, we may conclude that *w* and *t* are not identical.

Now consider what happens when we read "is identical to" as "is made of the same stuff as". If we read the relation between *w* and *t* as $w =_2 t$, we will conclude that they are identical. This is because *w* is made of all the same boards and parts that comprised *t* when the latter ship was built. Certainly there was a disruption but if I take apart the engine of my car, spread it out across my living room floor and then reassemble it, we do not deny that the same engine came out of and went back into the car. This is like what happened to *t* under the '$=_2$' reading of identity. Conversely, if we read the supposed identity between *i* and *t* as $i =_2 t$, we can clearly see that *i* is not identical to *t*. This is because of the simple fact that *i* is iron whereas *t* is not.

There is an objection that might be raised at this point. One might note that the distinction between spatiotemporal continuity and "made of the same stuff as" is not so clear cut. Consider the example of the car engine just discussed. For the sake of clarity, let *e* be a name for the engine before it was first removed and disassembled, let *f* be the mereological sum of the parts spread across my floor, and let *g* be the engine that is put back in the car. There is a sense in which *f* and *g* are spatiotemporally continuous with *e*. If *w* is spatiotemporally continuous with *t* in the same way that *g* is spatiotemporally continuous with *e* it would seem that not only is $w =_2 t$ but also $w =_1 t$ and this is not the result we wanted. What is required at this point is some spelling out of spatiotemporal continuity. This is not a project I wish to undertake here but I will suggest that there is a point at which during the process of taking something apart that spatiotemporal continuity is not preserved. Most likely the break will occur at the point at which the

collection of parts no longer comprise a thing of the type they once did. For example, spatiotemporal continuity is not preserved when the engine parts are spread out across the floor because at that point they do not make up an engine.

Setting aside the problem of spatiotemporal continuity, we may better understand the equivocation that takes place when we use the identity predicate as similar to the equivocation that takes place when we use a word with more than one definition. Take the sentence, "Sue is green." Depending on the context and what is on the mind of the speaker, we may read this sentence as commenting either on Sue's color or as saying something about the level of her experience. Presumably, on fleshing out the context, we will determine that on one definition of "green", the sentence is true while on another, the sentence is false. If Sue is very experienced at what she does but has fallen ill and turned a funny color then when we understand "green" to mean the color green the sentence "Sue is green" is true while if we understand "green" mean inexperienced, the sentence is false. On the other hand, if Sue is not ill but new at her job, when we take "green" to refer to color, the sentence "Sue is green" is false but when we take "green" to mean inexperienced, the sentence is true.

The clarification of the word "green" had an effect on the truth value of the sentence about Sue that is very similar to the effect that clarifying identity had on the truth values of the identity statements in the puzzle about Theseus' ship. What seems to generate the puzzle is that the story does not clearly give us a context that will help us figure out whether we are using '$=_1$' or '$=_2$'. Since we are unsure what is meant by identity in the story, we see good reasons to think that $i=t$ and good reason to think that $w=t$.

The question now is, how does this theory account for the datum regarding the shift of opinion that occurs when half the story of Theseus' ship is told and when the whole thing is told? The answer is actually relatively simple. When we have only half the story, we have in mind only one clarification of identity, $=_1$. However, when the rest of the story is told, we become aware of the another possible of meaning of identity and this has the effect of making unclear which is intended thus creating a puzzle because we do not have a good context for determining which definition is meant.

Notes

[1] I do not intend to beg any questions in assigning names. By using three names, I am not implying that there are three distinct ships. It could turn out that *i=t* or *w=t* leaving us with only two ships.

[2] Terence Parsons, Indeterminate Identity: Metaphysics and Semantics (forthcoming) 23.

[3] Parsons forthcoming 41, note 8. It is worth emphasizing that Parsons believes little rests on the distinction between holding that indeterminacy is a third truth value rather than merely a third truth value status.

[4] Parsons forthcoming 45.

[5] Parsons forthcoming 59.

[6] For our purposes, we need not go into much detail regarding Łukasiewicz's logic. The most distinctive feature is that in the case of biconditional statements of the form $(A \leftrightarrow B)$, the statement is true when the terms on both sides have the same truth value (or truth value status), false if one term is true while the other false and indeterminate otherwise. Also, it will be relevant later on to note that a conjunction of the form (A & B) is true when both terms are true, false when at least one of the terms is false and indeterminate otherwise.

[7] From here on I will refer to the logic of indeterminacy as three valued though this is not technically correct since 'indeterminate' is not a truth *value*. I do this because it is easier than talking about a logic with three truth value *statuses*.

[8] Parsons forthcoming 30-31.

[9] In the manuscript to his forthcoming book, Parsons uses the symbol '!' instead. I have chosen to use the delta because it is more common in the literature.

[10] Gareth Evans, "Can There Be Vague Objects?" Analysis 38.4 (1978): 208.

[11] There is some debate suggesting that Evans had a different project in mind but most of the discussion has attributed to him an argument against indeterminate identity. For an examination of another possible interpretation of Evans' argument see Parsons forthcoming 275-287.

[12] For those unfamiliar with the notation, the lambda abstract $\lambda x[\nabla(x=a)]$ stands for the property of being indeterminately identical to *a*. In lambda calculus this is treated as a function that may take an argument to yield a value. In this case $\lambda x[\nabla(x=a)]b$ is true since *b* has the property of being indeterminately identical to *a*.

[13] That is, the two expressions are equivalent. Using a sentential variable 'A', if it is determinate that not-A ($\Delta{\sim}A$) then it is not indeterminate that A (${\sim}\nabla A$). This is similar to the use of duality in the modal logic of possibility and necessity. If it is necessary that not-A ($\Box{\sim}A$), then it is not possible that A (${\sim}\Diamond A$).

[14] Terence Parsons, "Entities Without Identity" Material Constitution: A Reader. ed. Rea. (Oxford: Rowman and Littlefield, 1997) 273-289; Terence Parsons and Peter Woodruff, "Worldly Indeterminacy of Identity." Vagueness: A Reader. Eds. Rosanna Keefe and Peter Smith. (Cambridge: MIT, 1996) 321-337.

[15] There is no indication in the literature that this interpretation of validity is controversial. Parsons endorses it and there is no reason to believe that Evans would not.

[16] See in particular Parsons' "Entities Without Identity" 281. Parsons and Woodruff may make a similar claim on page 326.

[17] This example comes from Parsons and Woodruff 326.

[18] This does not work on a semantics such as Bochvar's. In Bochvar's case, when A is true and B is indeterminate, the conjunction of A and B will be indeterminate and the contraposed '&-elimination' is not valid. I reject Bochvar's semantics because it invalidates a number of inferences which we ordinarily believe are valid even in a three-valued semantics. For example, consider the disjunction $(P \vee Q)$. If P is true, we would maintain that the whole disjunction is

true. On Bochvar's semantics in which the indeterminacy of a part "infects" the truth value of the whole rendering it indeterminate, however, the disjunction would be indeterminate.

[19] I have not explored the topic of whether or not there is a pattern to which inverted inferences are valid and which are not.

[20] Parsons forthcoming 53. Italics in the original.

[21] Evans 208. Italics added for emphasis.

[22] Parsons forthcoming 72.

[23] Parsons forthcoming 54.

[24] 18 above.

[25] D. H. Mellor, "Properties and Predicates," Properties ed. Mellor and Oliver (New York: Oxford UP, 1997) 260.

[26] Rosanna Keefe, "Contingent Identity and Vague Identity," Analysis 55.3 (1995): 183-190.

[27] Technically, they *were* identical but the present tense is much easier to handle in this context.

[28] Saul Kripke, "A Puzzle About Belief," The Philosophy of Language 3rd edition, ed. Martinich (New York: Oxford UP, 1996) 383.

[29] Keefe 188.

[30] Parsons forthcoming 75. To be fair, Parsons does qualify what he says about these two types of properties by saying he is not entirely sure the distinction can be made.

[31] To be fair, Parsons indicates that there are possible worlds in which every identity claim is determinate. These are worlds in which no identity claim is left undetermined by the facts in the world. He does, however, seem to believe that this world is not one of them. (1) could be put in terms of possibility but doing so would change nothing about the argument in this section since the empirical problem has to do with (2).

[32] Parsons forthcoming 3-5.

[33] Parsons forthcoming 3.

[34] Harold Noonan, "Wiggins, Artefact Identity and 'Best Candidate' Theories," Analysis 45.5 (1985): 4-8.

[35] I will not discuss the absurdities of the closest continuer theory or Noonan's defense of the only x and y principle.

[36] Someone might object that this intuition is not as strong as the intuition supporting the only x and y principle. In response I would point out that since identity is an intrinsic relation that does not depend on any accidental relations with other things in the world, and since being indeterminately identical is a mode or way of being identical, it too will be an intrinsic relation and this means my revision of the only x and y principle follows deductively from the original.

[37] I should stress that the following are not arguments that have been offered in defense of indeterminate identity. I present them because I believe them to the sort of reply someone could make on behalf of indeterminate identity. I hope that the arguments I present are not strawmen but reasonable anticipations of possible replies to the project I have undertaken in exploring the phenomenon of shifting intuitions when only part of the story of the Ship of Theseus is told versus the whole thing.

[38] This might not impress a substance dualist since she would hold that not only do we survive part replacement but we survive the total annihilation of the physical matter that makes up our bodies. I am assuming that substance dualism is false which makes the intuition that we survive part replacement significant.

[39] I will not undertake this project here.

[40] Parsons forthcoming 224

[41] David Lewis, "Counterparts or Double Lives?" Material Constitution: A Reader. Ed. Michael Rea. (Oxford: Rowman and Littlefield, 1997) 126-147. Lewis considers identity in terms of de re representation across possible worlds.

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