

ESSENCE, PLENITUDE, AND PARADOX

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Essentialism in philosophy is the view that there are *in principle* two ways of having properties and including parts: the essential way and the accidental way (e.g. Fine, 1994, 1995; Johnston 1984, 2006; Kripke, 1980; Salmon 1986, 2005; Yablo 1987). As I understand the view, even an extreme essentialist — who takes every property and every part to be had essentially — should agree with the in-principle distinction while arguing that certain metaphysical considerations mean that the second way of having properties is not, and cannot be, exemplified. Such a view would contrast with the view of an anti-essentialist like Willard van Orman Quine who repudiates the very distinction between the two ways of having properties. Quine's view is not that all properties are accidental, for that would be to use what he calls the "invidious distinction" (1953), rather than repudiate it. His view is that there is not even in principle these two ways of having properties (or satisfying predicates, as he would put it), about which we can ask "Which of these two ways do things have properties?"

What then ostensibly distinguishes the essential way of having properties from the accidental way? An object's essential properties are conditions on what it is to be that object, and this set of conditions fixes just which possibilities or possible worlds the object exists in, namely just those in which it satisfies those conditions. An object's essential properties also fix how long it exists, namely only at those times at which it satisfies those conditions. An object's accidental properties are those of its properties that it can be found without at some times or at some worlds. Likewise, an object's accidental parts are those it can be found without at some times or worlds.

It is difficult, and perhaps impossible, to be an essentialist without embracing a plenitude of entities — far more entities than common sense explicitly recognizes. This is sometimes noted in the literature, and usually in the context of entities in different categories or in different manifest kinds, such as a statue and the lump of clay which constitutes it (e.g. Fine, 2003, 2008; Johnston, 1992). However the scope of the resulting plenitude of entities and its consequences for metaphysics has not been fully understood. In this paper I argue that a

long-standing paradox of essentialism is easily resolved once the connection between essentialism and plenitude is appreciated. This paradox has several formulations, versions of which are known as “Chisholm’s Paradox” “Chandler’s Paradox” and “The Four Worlds Paradox”. The paradoxical element, I argue, is illusory, and arises only because two or more distinct entities are mistakenly thought to be identical. Because of the connection between essentialism and plenitude, the essentialist assumptions of the paradox guarantee that there multiple entities in play, even if common sense is taken to suggest otherwise. The apparent paradox is generated by holding to essentialism while taking common sense’s suggestion too seriously, and insisting there must be a single entity where there are, in fact, many. (This insistence may rest on a misinterpretation of commonsense *counting* — arguably to count the number of Ks is in effect to count the number of discrete, i.e. not-entirely-overlapping, Ks — so that what the essentialist is committed to is not really at odds with commonsense, but only with a naïve philosophical construal of it.)

Essentialism and Plenitude

Since essentialism holds that there is not *one* but rather *two* ways that an item can have a property or include a part, it opens the door to a proliferation of entities. This has been observed since the early history of essentialism, as is illustrated by the view often attributed to Aristotle as his ‘theory of kooky objects’ (e.g., F. Lewis, 1982; Matthews, 1982; White, 1971). These kooky objects are items such as sitting-Socrates and musical-Corsicus — items that share the essential properties of Socrates and Corsicus, except they are also respectively essentially sitting and essentially musical. When Socrates is seated, why does this further entity sitting-Socrates not come into existence — only to be destroyed when Socrates stands? Of course, common sense does not recognize such entities, but common sense need not be a good guide to the whole extent of ontology. If the essentialist does not wish to countenance such items, she owes us an explanation of why the combination of Socrates’ essential properties plus *being seated* is somehow unacceptable or inadmissible as an essence: why is this not an essence an entity can have?

The scope of this challenge can be illustrated by considering an abstract (and simplified) general model. Suppose — simplifying massively for the purposes of illustration; see Yablo (1987) — that we have an item with five properties. Suppose further that those properties are strongly modally independent, so that each of the five can be possessed either essentially or accidentally without requiring that the other four be possessed essentially, accidentally or even at all, and likewise for any combination of the properties.¹ Finally, suppose the essentialist claims to have discovered that *the* item in question has two of the five properties essentially, and the other three merely accidentally. Now we can ask: why is there not also another entity present that has only one of the properties essentially?

Why is there not one that has four of the properties essentially? Why not items that have other combinations of the properties essentially? Since we stipulated that these properties are modally independent from each other no independent metaphysical principles will rule out these possibilities. If we wish to rule out this plenitude of entities, we will need a new metaphysical principle that will rule that all but one of these combinations specifies an allowable essence — an essence that an entity can have. Let us call such a principle a *principle of limited variety of essences*.

If we do not insist that the properties in the model be strongly modally independent, then some of the combinations of properties will fail to specify essences. For example, consider a blue square, and suppose we decide that *being spatially extended* is an essential property of the square, but *being blue* is accidental. If we attempt to specify an essence by ‘swapping’ these properties we will fail: since *being blue* necessitates *being spatially extended*, nothing is essentially blue but accidentally spatially extended. No ‘principle of limited variety’ is needed to eliminate this alleged essence — general metaphysical principles suffice to rule it out.

Interestingly, the example of sitting-Socrates may also be ruled out on general grounds, unless some adjustments are made. Suppose, as is reasonable, that Socrates is essentially a self-maintaining living thing — that is, Socrates performs certain life functions, as a usually reliable means of preserving his continued existence. It would seem that sitting-Socrates cannot be essentially self-maintaining, since sitting-Socrates does not undertake any particular actions so as to preserve its continued sedentary condition. Thus, the alleged essence specified by simply ‘adding’ *being seated* to the list of Socrates’ essential properties does not in fact correspond to a possible essence; it is internally problematic, and so no independent principle of limited variety is needed to rule it out. This is not, of course, to say that a similar entity cannot be specified, however — one that shares many of Socrates’ essential properties (though not *being self-maintaining*), and is essentially seated. General metaphysical principles may narrow the list, but it would be wildly optimistic to suppose that they will narrow the list to just the one item recognized by common sense — namely, Socrates.

Let us call the combinations of essential properties that are not ruled out on general grounds *candidate essences*, and let us call essences that entities can have *admissible essences*. (For extended discussion of how to arrive at candidate essences, see Yablo (1987) and Leslie (submitted).) It should be clear upon reflection that there will be far more candidate essences than there are entities recognized by common sense. Thus, if essentialism is to avoid positing a plenitude of entities, it needs to present a principle of limited variety to deliver the result that only a few candidate essences are in fact admissible essences.

Perhaps such a principle can be formulated so as to deliver the result that Socrates’s essence is the only admissible essence to be found among the relevant candidate essences; for example, perhaps one could argue that to be an admissible

essence, *begin a self-maintaining substance* must be among the essential properties (and then also argue that no variant on Socrates' essence meets this criteria). I am skeptical that any such principle can be defended even in the case of living beings (Leslie, submitted), but I will not argue for this here. For the purposes of this paper we need only consider whether such a principle could be remotely plausible the case of artifacts.

As an illustration, imagine we take a ship made of one hundred planks and remove each plank one by one. (For simplicity, let us suppose we burn each plank immediately after removing it from the ship.) Intuitively, there will come a point at which our ship no longer exists — certainly this will be the case by the time the last plank is burned, and is naturally thought to come a good bit before that. On the essentialist view, this point is determined by the ship's essence — being constituted by some minimum number of planks will be an essential property of the ship, and so once we pass this point, the ship ceases to exist.

If the essentialist believes there is a unique ship here, she faces the question: what is the number n such that the ship exists if $n+1$ of its planks still remain, but ceases to exist when only n of its planks still remain? It might seem that this question is an unfair one because of vagueness, but one needs to be cautious on this point. It is one thing to think that there is *linguistic* vagueness, another to think that there is *metaphysical* vagueness, especially when it comes to questions about existence. Recall that, for the essentialist, an item's essence determines its conditions for existence; if its essence is to be vague, then there will be instances in which the item hovers indeterminately between existence and non-existence. Some philosophers have defended such views, but most reject this notion. So while the essentialist might agree the word/concept "ship" does not have a definite n associated with it, she still faces the question of what this n might be for the (allegedly) unique entity in question, lest she find herself committed to the idea that there is some range of numbers for which the entity hovers strangely between being and not-being.

Suppose, then, that the essentialist determines that n is 20 planks; that is, the essentialist truth about the ship is that when *all that remains of it* are 20 planks arranged however they might be, the original ship has ceased to be, and cannot be reconstructed by augmenting the 20 remaining planks. This property — being such that it has ceased to be and cannot be brought back after its constitution has been reduced in this way to 20 planks — is an essential property of the ship. This property thus figures in an *admissible* essence — an essence that is countenanced as one than an entity has.

However, consider the following candidate essence: the essence that is just like that of the ship, but which includes instead the property of being such that anything that has it will forever cease to be after its constitution has been reduced in this way to 25 planks. This is quite clearly a *candidate* essence — no general metaphysical principles will rule this out as an impossible essence. But why is this not also an admissible essence? What plausible principle of limited variety could be invoked to allow the $n = 20$ essence, but not the $n = 25$ essence? Once

we allow that the $n = 20$ condition figures in an admissible essence, it will be utterly arbitrary not to allow there are many such essences in the offing: as well as the $n = 25$ essence there is the $n = 28$ essence, the $n = 17$ essence, and so on. And if there are such essences then it follows that many ships (or ship-like entities) were entirely coincident with our ship during the period before it began to be destroyed by disassembly. They are distinct entities because they cease to be at distinct points in the process of disassembly.

Once we see how indefensible such a principle of limited variety would be, it is easy to model the vagueness of the term “ship” without recourse to metaphysical vagueness. The vagueness here is wholly linguistic — the phrase “this ship” simply does not pick out a unique entity in the plenitude. Each entity has fully determinate conditions of existence, but our language and concepts do not single out a particular entity.

Could one avoid plenitude by embracing metaphysical vagueness? Suppose we pick out a range of n such that the ship neither determinately exists nor determinately doesn't exist in that range. Then we have deemed that the range figures in an admissible essence (we can even allow that the range have fuzzy boundaries, so as not to rule out higher-order vagueness). Then consider another clearly distinct — again so as to be clear that we are not trading on higher-order vagueness — *range* of values of n . If the former figures in a candidate essence, so does the latter. Now we ask again: what plausible principle of limited variety will rule out the latter while allowing the former? Thus, even if we accept metaphysical vagueness, with all its concomitant difficulties, plenitude would still only be avoided by a highly implausible principle of limited variety.

In the case of artifacts (and I think even more generally) it is very hard to see how a sufficiently strong principle of limited variety could be defended so as to vindicate the prejudice against plenitude while holding on to essentialism. Essentialism, it might be said, invites plenitude simply by holding that there are not one but two ways to have properties and parts. While this is sometimes noted in the literature (e.g. Fine, 1999; Hawthorne, 2006; Johnston, 2006; Yablo, 1987), its unavoidability and more importantly its implications have not been fully appreciated. In what follows, I discuss a long-standing cluster of apparent paradoxes, which have been taken seriously by Roderick Chisholm (1967, 1973), Willard van Orman Quine (1976), Hugh Chandler (1976), Saul Kripke (1980, fn. 18), David Lewis (1986), Nathan Salmon (1986, 2005), Graeme Forbes (1984), Penelope Mackie (2006) and others, and argue they are readily resolved once we see the connection between essentialism and plenitude.

The Paradox of Tolerant Essence: Chisholm and Chandler

On one formulation, Chisholm's (1967, 1973) paradox asks us to consider a ship (call it Ship1) made from 100 planks, and supposes that while the ship's (original) constitution is essential to the ship, the ship's essence is nonetheless

ever so slightly ‘tolerant’ along this dimension: we could have made that very ship if we had substituted one different plank. This assumption has intuitive plausibility — it seems unnecessarily strict to insist that even one plank out of a hundred could not have been different, else that very ship would not have existed.

The apparent paradox then unfolds by asking us to consider a chain of possible worlds w_1, \dots, w_{101} , each containing a ship made from 100 planks, such that in w_1 there is a ship made of the original 100 planks, in w_2 there is a ship that is made of 99 of those planks plus one new one, in w_3 there is a ship made of 99 of the same planks as in w_2 , plus one more, and so on. That is, in each w_{n+1} , there is a ship made of 99 of the same planks as the ship in w_n , plus one new plank. Thus, in the first world w_1 , made of the original 100 planks, while in the 101st possible world, w_{101} , made of none of the original planks.²

The paradoxical reasoning is then as follows: by hypothesis, Ship1’s original constitution is essential to it, yet its essence is tolerant, so that it could be made with one different plank. w_1 uncontroversially contains Ship1, and so does w_2 , since w_2 represents an alternative original constitution of Ship1. But if w_2 contains Ship1, so does w_3 , since the constitution of the ship in w_3 differs from that of the ship in w_2 only by one plank. Ship1’s essence is tolerant, and Ship1 exists at w_2 , and the ship at w_3 shares the same original constitution as the ship at w_2 , save only for a small variation that is allowed for by the tolerance in Ship1’s essence. Generalizing, for each pair of successive worlds w_n and w_{n+1} , it would seem that we have the same ship in each — since by hypothesis the ship’s essence tolerates one-plank changes — and so by transitivity of identity, the ship in w_1 is identical to the ship in w_{101} , despite their not sharing any of the same planks when they are first constructed. Ship1 exists in w_{101} , but is made from entirely different planks than in w_1 — *despite the fact that we initially stipulated that its original constitution was essential to it, albeit with a small amount of leeway (i.e. one plank)*. Herein lies the paradox: it would seem that essences cannot be at all tolerant, and yet we surely have the intuition that we could have made *this very ship* had we changed out just one of the planks.³

Perhaps it might not seem too extreme to avoid all this by supposing that a ship’s original planks are strictly essential to it. But what, though, of the planks themselves? We might naturally suppose that their original constituting matter is essential to them, but now we can ask: could it have been the same plank had one single proton been replaced by another? If we answer yes, then the paradox reemerges for the planks themselves, and so by extension for the ship.

One might suspect that this paradox is driven by vagueness — that it is somehow no more than a sorites paradox in disguise, rather than being a sui generis paradox about essence. However, this is not so, as is made clear by another version of the paradox, which focuses on a three-part artifact, whose essence is stipulated in a precise way (compare Chandler (1976)).

Suppose in w_1 I build an axe Axe_1 out of blade $Blade_1$, shaft $Shaft_1$, and handle $Handle_1$. This axe, *let us stipulate*, is essentially (originally) composed of

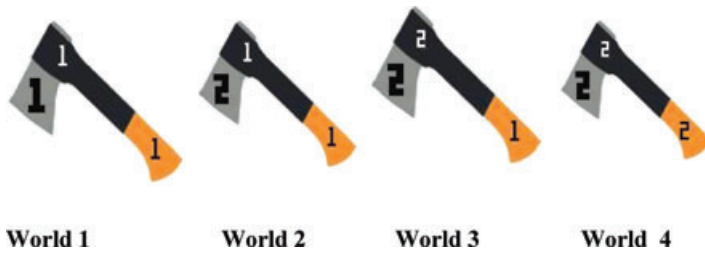


Figure 1. The Paradox.

those parts, but its essence is tolerant to this extent: as long as two out of the three parts are involved, *Axe1* could have been made with one part different. So we have *w2* in which *Axe1* is made with a different blade but the same shaft and handle: *Blade2*, *Shaft1*, and *Handle1*. Now surely *Axe1*'s essence is still tolerant in *w2*. But then there will be *w3* in which we build *Axe1* with a different shaft than we used in *w2*: *Blade2*, *Shaft2*, and *Handle1*. Now, however, we have a possible world *w3* in which *Axe1* is built with only one of the three parts with which it was built in *w1* — but as we originally stipulated, *Axe1*'s essence allows only *one* of its parts to be different. As we originally described it, no axe made from *Blade2*, *Shaft2*, and *Handle1* could be identical to *Axe1*, since *Axe1* must essentially be built from at least two of the following parts: *Blade1*, *Shaft1*, and *Handle1*. Thus the axe in *w3* cannot be *Axe1*; yet by transitivity of identity, it *must* be *Axe1*. While these three worlds suffice to illustrate the paradox, it can be made more vivid by considering a fourth world *w4*, in which the axe in *w3* is built with one part different from the axe in *w3*: *Blade2*, *Shaft2*, and *Handle2*. Since the axe in *w3* has a tolerant essence, this is a permissible way for it to be built. But now by transitivity of identity we have the result that the axe in *w4* is identical to *Axe1*, *even though it has no parts in common with Axe1*. Thus, even though we stipulated at the outset that its original constitution was essential to *Axe1*, albeit with some degree of tolerance, we obtain the result that *Axe1* could in fact have been built with an entirely different original constitution. (See figure 1.) The invocation of vagueness is obviously not to the point here, for we have stipulated it away; instead the problem arises on a certain conception of “tolerance” in the original constitution of the axe.

Salmon's Solution to the Paradoxes

Nathan Salmon (1986; 2005 (originally 1981)), following Hugh Chandler (1976), has argued for an influential solution to the paradoxes. His solution hinges upon rejecting the idea that what is possibly possible is possible simpliciter. That is, Salmon argues only some possible worlds are accessible from the actual world, and that different worlds may be accessible from those immediately accessible worlds; this is coherent, Salmon argues, because the accessibility

relation is not transitive, so worlds that are accessible from accessible possible worlds need not be themselves accessible from the world under consideration.

Salmon's solution to the paradoxes thus runs as follows: If we make *Axe1* out of *Blade1*, *Shaft1*, and *Handle1* in *w1*, then since *Axe1*'s essence is tolerant, *w2* — in which we make *Axe1* from *Blade2*, *Shaft1*, and *Handle1* — is accessible from *w1*. But again, since *Axe1*'s essence is tolerant, there is a world *w3*, which is accessible from *w2*, in which *Axe1* is made from *Blade2*, *Shaft2*, and *Handle1*, and similarly, *mutatis mutandis*, for *w4*. However, *w3* and *w4* are not accessible from *w1*; the possibilities that *w3* and *w4* represent are merely possibly possible, and possibly, possibly possible respectively, relative to *w1* — not straightforwardly possible. If we suppose that *w1* is the actual world, then we might say that *had things been different* — i.e. had we made *Axe1* from *Blade2*, *Shaft1* and *Handle1* — then it would have been possible to make *Axe1* from *Blade2*, *Shaft2*, and *Handle1*. However, since in fact we made *Axe1* from *Blade1*, *Shaft1*, and *Handle1*, it is not possible *Axe1* have been made from *Blade2*, *Shaft2*, and *Handle1*. As Salmon sees it, the paradox is driven by the false assumption that what is possible relative to a world that is possible simpliciter, is itself possible simpliciter. Thus he claims the paradox turns on what he calls 'the fallacy of possibility deletion'.

Salmon's solution is ingenious, and has been influential.⁴ I do not think that it is ultimately satisfactory, for a reason that has not been noted. Salmon's treatment of the paradox faces a destructive dilemma: either the 'paradoxical' argument stops at the second world, in which case there is no paradox to be explained away by Salmon's appeal to the 'deletion fallacy' or he is committed to the view that an item's essence could have been different than it is, even if we restrict our interpretation of the relevant 'could' to the accessible worlds — i.e. the worlds that are possible simpliciter. The world *w2* is accessible from *w1* and vice versa; each represents straightforward possibilities for the items that exist in the other. But on Salmon's description of the case *Axe1* in *w1* has a different essence from *Axe1* in *w2*. To see this, we need to be very clear about the notion of a tolerant essence.

What is a Tolerant Essence?

Let us begin by noting that there may be something a little suspicious about the description of *Axe1*'s essence: we began by supposing that its essence was 'tolerant' in that the axe could have been made with one part different relative to its original composition, and also that its original composition consisted of *Blade1*, *Shaft1*, and *Handle1*. Now, it would seem that we might have described this same essence differently. Isn't the 'tolerant' essence just specified equivalent to the following at-one-level intolerant essence? *Axe1 is essentially constituted by at least two out of the following three parts: Blade1, Shaft1, and Handle1, plus the appropriate kind of third part if needed.* This would seem to pick out the

same essence, only with greater precision, since now the parts are specified in the description of the essence. It is easy to see that any putative tolerant essence will be describable as an essence that is in a certain way *intolerant*, and surely we should prefer to speak in terms of these more precisely specified intolerant essences. That is, it would seem that once we are more precise about what a ‘tolerant essence’ could actually come to, it will in fact be equivalent to a certain kind of *intolerant* essence.

One way to emphasize what is going on here is to make a distinction between *variably realized essences*, i.e. essences whose fixed fulfillment conditions can admit of varied realization from world to world, and *invariant essences*, i.e. essences whose fixed fulfillment conditions admit of no such variation across worlds. So it may be part of my essence to be conceived somewhere in the universe, but not in any given specific place. (The earth was spinning through space when it happened, and it could have happened slightly earlier or later I assume.) This part of my essence is *fixed* but subject to various different realizations. It is ‘intolerant’ at the level of being conceived somewhere, but flexible at the level of exactly where I was conceived. This seems a possible essence for something to have, at least if there are essences.

What is not possible — not possible simpliciter, since it conflicts with the very notion of essence — is an object having an unfixed or *thoroughly variable essence*, an essence that varies from possible world to possible world, not just in its realization but in its higher-order conditions of fulfillment. An object’s essence is its essence in every possible world; any item with a different essence simply cannot be identical to the original object.

Unfortunately, the very idea of a tolerant essence, with which the Chisholm/Chandler paradoxes begin, is first introduced plausibly by way of claims about variably realized essences and then gets parlayed into necessarily false claims about unfixed or variable essences, essences whose higher-order fulfillment conditions themselves vary from world to world.

Notice for example that Salmon’s treatment of the paradoxes implies that *Axe1’s essence could have been different than it is*. We in *w1* build *Axe1* with *Blade1*, *Shaft1*, and *Handle1*, and agree that *Axe1*’s essence is tolerant in that it could have been made with one part different. What this means is that *Axe1* could have been made with two out of those three parts, plus a new part of the relevant sort as needed; it does not mean anything more obscure or elusive that this (even if the ‘tolerant essence’ locution invites us to think otherwise). If we accept Salmon’s description of the case, then at *w2* — where *Axe1* is made from *Blade2*, *Shaft1*, and *Handle1* — *Axe1*’s essence is there such that it could have been made from two out of *those* three parts (plus a new part of the relevant sort as needed). But then *Axe1* has an essence at *w2* which is *different* from its essence at *w1*. Since *w2* is accessible from *w1*, we have it that *Axe1*’s essence could have been different than it is.

This is just not consistent with the notion of essence. A thing’s essence could not have been different than it is. All that is possible, all that could be

sensibly meant by a ‘tolerant essence’, is that a thing’s fixed essential conditions of existence may be open to variable realization. But in accepting the terms of the so-called paradox, this is parlayed into what is in effect the notion of a variable essence.

In his reply to Forbes, Salmon writes:

The key feature of Chisholm’s paradox — the feature of it that makes it a peculiarly modal paradox — is its essential use of nested modalities. It proceeds from the observation that the truth of the modal principle (II) is no accident but is a necessary truth. (Salmon, 1986, p. 88)

and here is the modal principle:

(II) If a wooden table x is the only table originally formed from a hunk of matter y according to a certain plan P , y' is any (possibly scattered) hunk of matter that sufficiently substantially overlaps y and has exactly same mass, volume, and chemical composition as y , then x is such that it might have been the only table originally formed according to the same plan P from y' , instead of from y . (Salmon, 1986, p. 77)

Clearly however, this principle cannot be necessary and true, for consider a pair of mutually accessible worlds in each of which x exists, but which are such that the difference between x ’s constitution in the two worlds approaches but does not quite meet the allowable limits imposed by the requirement of “sufficient substantial overlap”. If (II) is necessary it follows that x ’s essential origins are tolerant in the second world in a way that they are not in the first world. That is, it follows that there are possibilities of variable realization of x ’s essence in the second world that are not found in the first world. This is just what cannot happen, for this implies that x has a variable essence — an essence that changes from world to world — not just a variably realizable essence.

More generally, none of these paradoxes arise if we distinguish variably realizable ‘intolerant’ essences and variable essences. If Ax_1 has the relevant ‘intolerant’ but variably realizable essence, it can still be made with one part different, as is the case at w_2 . However, it cannot be made with two parts different, as is supposed to be the case at w_3 , nor can it be made with all three parts different, as is supposed to be the case at w_4 . Thus once we are precise in this way — once we clarify the shifty notion of a tolerant essence — there is no paradox: Ax_1 exists in w_1 and w_2 , but not w_3 or w_4 . Problem solved?

Not so fast: what could have led Chisholm, Chandler, Kripke, D. Lewis, Salmon, Forbes, Mackie, and others who have taken these paradoxes seriously to have slid from variably realizable essences to variable essences? Indeed there is a natural response they could give at this stage, one which is invariably part of the informal set up of the paradox. After all, so the response goes, there is nothing special about w_1 in our construction; we could have started with

any other world in which *Axe1* uncontroversially exists. So consider *Axe1* as it is made in *w2* — out of *Blade2*, *Shaft1*, and *Handle1*. We might just as well have begun our discussion at *w2* instead of *w1*, and agreed that *Axe1*'s allegedly tolerant essence really should be clarified as a certain kind of variable realized *intolerant* essence as follows: *Axe1* is essentially made from at least two out of the following three parts: *Blade2*, *Shaft1*, and *Handle1*, plus the appropriate kind of third part if needed. There is no magical halo surrounding *w1* that compelled us to begin our description of the case with that world — *w2* might have done just as well. This response helps explain why all these philosophers are so readily led to accept the initial description of *w1* and *w2*; we accepted or stipulated that *Axe1* need only have two out of three of its original parts, and there is nothing special about starting with *w1* or *w2*, so *Axe1* need only have two out of three of *Blade1*, *Shaft1*, and *Handle1* as its original parts (as in *w1*), and it need only have two out of three of *Blade2*, *Shaft1*, and *Handle1* as its original parts (as in *w2*).

True, once we indulge in this kind of thinking the familiar paradoxes get underway. But the thinking is itself already paradoxical, indeed it is genuinely inconsistent, for it entails that *Axe1* has a different variably realizable essence depending on whether we start with *w1* or *w2*. This, once again, is the incoherent idea of a variable essence.

Plenitude and the Paradoxes

What has gone wrong here? I believe that these paradoxes take us in because of an illusion of singularity: "Surely," we say, "there is only one *axe* in *w2* and it must be taken to be our original *Axe1*, since *w2* was set up precisely to represent the very possibility that lies in the essence of *Axe1*, namely this: although in *w1* it was made of *Blade1*, *Shaft1*, and *Handle1*, it could have been made from just two of these three with one other part, and so in particular it could have been made from *Blade2*, *Shaft1*, and *Handle1*. But since there is nothing special about starting with *w1* rather than *w2*, we can now see that *Axe1* could also be made from *Blade2*, *Shaft2*, and *Handle1*. But now we have the paradox. For we stipulated that this was beyond the limit of 'sufficiently substantial overlap' in parts, namely overlap of two out of three parts."

We actually don't have a paradox, however. What needs to be shown to begin the paradox is that there is *only one* *axe* in *w2* and this is far from obvious once we set out the details of the case. Here are two distinct essences; nothing could have both, and if *x* and *y* have the first and the second respectively, then *x* and *y* are necessarily distinct:

Essence1: properties P, Q, R...and the property of being originally made of 2 out of 3 of *Blade1*, *Shaft1*, *Handle1* plus an appropriate third part as needed.

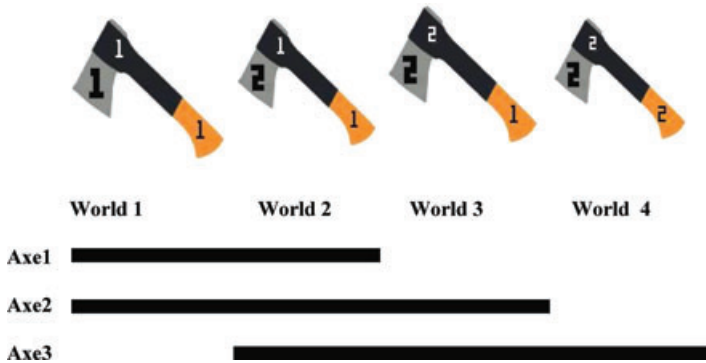
Essence2: properties P,Q,R...and the property of being originally made out of 2 out of 3 of *Blade2*, Shaft1, Handle1 plus an appropriate third part as needed.

Both essences are certainly on a par with one another, in the sense that both seem to be equally admissible essences: they differ only in whether it is Blade1 or Blade2 that is specified. What could make it the case that the axe in question has the one essence rather than the other? Speaking loosely of tolerant essences let us avoid these questions, but only at the cost of living with paradox — including a ‘two worlds’ paradox (which has been, to my knowledge, entirely unnoticed in the literature): a ‘paradox’ consisting of Axe1 having Essence1 in w1 and Essence2 in w2. That is simply impossible, but the more familiar paradoxes depend on this being in place.

The underlying issue here is that there is more than one axe in each of the worlds under consideration. One such entity has the essence that we specified for Axe1 when we began our story in w1: an entity that is essentially constituted by at least two out of the following three parts: Blade1, Shaft1, and Handle1, plus the appropriate kind of third part if needed. Another such entity has the essence we (thought we) specified for Axe1 when we began at w2: an entity that is essentially constituted by at least two out of the following three parts: *Blade2*, Shaft1, and Handle1, plus the appropriate kind of third part if needed; let us call the entity with this essence Axe2. These are distinct entities, with distinct essences. Both entities would seem to be axes, and are composed of the same parts in w2, and are in all categorical respects alike. Both of those axes also exist at w1, however only one of them exists at w3, and neither exists at w4. The transitivity of identity does not lead us into paradox here; it merely appears to because we failed to recognize that with essentialism comes plenitude. There is something at w2 that is identical to w1’s Axe1, and there is something at w2 that is identical to something in w3, namely Axe2. This does not mean that Axe1 is identical to anything in w3 – this thought is only tempting if we think there is only one axe at w2. (See figure 2 for an illustration.)

W4 contains neither Axe1 nor Axe2, however it nonetheless contains an entity that also exists at w2 and w3, namely Axe3. Axe3 is an entity that is essentially constituted by at least two out of the following three parts: Blade2, Shaft2, and Handle1, plus the appropriate kind of third part as needed. As figure 2 illustrates, our intuitions of local identity (i.e. that each world in the sequence contains an axe that is identical to an axe in the previous world) are vindicated. However, the identities are only local, and do not carry across all the worlds, so no paradox arises. Once we recognize that essentialism invites plenitude, the paradox is resolved.

At this juncture, it is important to note that plenitude is not simply something that is being wheeled out to resolve the paradox. If that were so, one might reasonably respond to the foregoing with a shrug: so we resolve the paradox, but only at the cost of populating the worlds with multiple co-located



Note: Black lines indicate that an entity exists at a given world. Only the entities relevant to resolving the paradox are shown. Plenitude, however, means there are far more entities present in the worlds.

Figure 2. Plenitude as Solution to the Paradox.

axes. This would be, I think, a misunderstanding of the real dialectic, namely that the apparent paradox depends on essentialism, but essentialism itself gives rise to plenitude. Plenitude is not introduced in response to the seeming paradox; rather both have a common ground in the core notion of essentialism, the idea that there are two ways of having properties and two ways of including parts, namely the essential way and the accidental way.

To see this, let us return to the set-up of the paradox. We begin by considering an axe made from Blade1, Shaft1, and Handle1. Further, we suppose this original constitution to be essential to the axe, though we allow that it could have been made with one part different. Once we are precise about what we mean and dispense with the incoherent notion of a variable essence, this means that we are considering an axe, Axe1, that is essentially made from two of the following three parts (plus one more as needed): Blade1, Shaft1, and Handle1. In order for the paradox to be formulated, we must allow that this is sort of essence that an entity can have. But now let us ask the question: what conceivable metaphysical principle could rule that *this* is an admissible essence while disallowing the following candidate essence: being essentially originally constituted by two of the following three parts (plus one more as needed): Blade2, Shaft1, and Handle1. What metaphysical good fortune could attach to Blade1 but not to Blade2 so that the former but not the latter enters into an admissible essence? What defensible principle of limited variety of essence could deliver this result?

The obvious answer is surely that if the essence we specified for Axe1 is an admissible essence, then so must be the essence we specified for Axe2, and similarly for Axe3 (two out of three of Blade2, Shaft2, and Handle1). But now consider a world (w2) in which Blade2, Shaft1, and Handle1 are appropriately assembled: this is a world in which the essences of Axe1, Axe2, and Axe3 are all

instantiated. These three axes are clearly distinct entities, as they have different essences. They can, however, be constituted by the same appropriately arranged parts, and this is what happens at w_2 . If we believe that entities have essences and so can be distinguished by their essences (as an essentialist must), then it is hard to see how this conclusion is to be avoided: for a given piece of matter with a set of properties at a world, there will be many distinct essences that are satisfied, and so many different entities constituted by this matter, all sharing the same properties at that world. To avoid this conclusion, we need a principle that allows only one of those candidate essences to be admissible — to be the sort of essence that an entity can have. And what sort of metaphysical principle would yield the result that Blade1 and Shaft1 but not Blade2 and Shaft2 can figure in the essences of things? Such a principle would, to say the least, be most implausible. (Note further that Blade1 and Blade2, and Shaft1 and Shaft2, could be exactly alike: how could it then be that only one of the candidate essences is admissible?)

Once we see (i) that an object's essence does not vary from world to world, even if the realization of that essence varies from world to world, and also recognize (ii) that there is multiple co-location of axes (or axe-like entities) in the worlds under discussion, the original paradox disappears. We are left with a hard-to-avoid consequence of essentialism's central claim that there are two ways of having properties and original parts, namely accidentally and essentially. If one doesn't like co-location as between Axe1 and Axe2, one should either stop being an essentialist or else set about making a case for an invidious distinction between these two candidate essences, a distinction which explains why one but not the other is admissible:

Essence1: properties P, Q, R...and the property of being originally made of 2 out of 3 of Blade1, Shaft1, Handle1 plus an appropriate third part as needed.

Essence2: properties P,Q,R...and the property of being originally made out of 2 out of 3 of Blade2, Shaft1, Handle 1 plus an appropriate third part as needed.

Good luck with that!

Total Intolerance and Counterpart Theory

It may seem that the essentialist has another way out of the Chisholm/Chandler paradox, namely to cut them off at the start by allowing no scope for variable realization of essence. So, if our essentialist is taken with the essentiality of origins, he had better say things like this: It is not just that I had to be conceived of somewhere, I had to be conceived at the exact spatio-temporal

location where I was actually conceived. It is not just that I had to have some original constitution; I had to have the exact original constitution I actually had. And so on and so forth for everything that has come into being.

Chisholm (1973) himself seemed tempted by this kind of response, for he presents strict mereological essentialism as a solution to the specific kind of paradox of variation in parts across worlds which he considers. (More exactly, he advocates mereological essentialism for 'primary' objects and treats so-called 'vulgar objects' as successions of these.) Chisholm's thought was that tolerance about constitution, i.e. allowing for variable realization of that part of a thing's essence, leads to trouble, so why not conclude that essences are not tolerant in this way, so that a thing cannot survive variation in any of its constituent parts? The more general thought is that 'tolerance', i.e. variable realization of essence, leads to trouble, so why not conclude there are no such essences? This amounts to using the alleged paradox as a way to establish a principle of limited variety of essences — namely one that rules out variably realized essence. If the alleged paradox was indeed a paradox, this would be a promising line of argument. However, since the supposed paradox, once clarified, depends on admitting essences no such argument remains.

A structurally similar response applies to Graeme Forbes (1984) solution to the paradoxes, namely the invocation of counterpart theory. Here the argument is that it is the assumption that a transitive relation of identity holds across items in different possible worlds which makes for trouble, so we should replace that assumption with the idea that items in different possible worlds can at most be counterparts of each other, where the relation of counterparthood is understood as the relation of similarity in central respects. Forbes' (1984) motivation for adopting counterpart theory comes from these alleged paradoxes; since the paradoxes are easily dissolved, depending as they do on admitting variable essences, this motivation does not hold up.

But what if one is motivated not so much to resolve the paradoxes, but to avoid plenitude? Here, some versions of counterpart theory *are* extremely helpful, in particular ones that allow for a single item to have multiple counterparts in a single world, and which then rely on context (or some other additional factor) to select from among these many potential counterparts. Such a version of counterpart theory was most prominently defended by David Lewis (1986), and is an example of an *Abelardian* account of modality (named after Peter Abelard, of Abelard and Eloise fame). Abelardian accounts of modality hold that the subject position of *de re* modal claims is referentially opaque. On an Abelardian treatment of *de re* modal or essentialist claims, such claims hold of entities only under a description or a conception, perhaps made salient by the context of utterance or the particular way the entity is characterized. Abelardianism dispenses with the central essentialist claim that there is a fixed set of essential properties that characterize an object. Instead an object may be essentially *F* relative to one context, but accidentally *F* relative to another. Essentialism invites plenitude because it supposes that there are two ways of

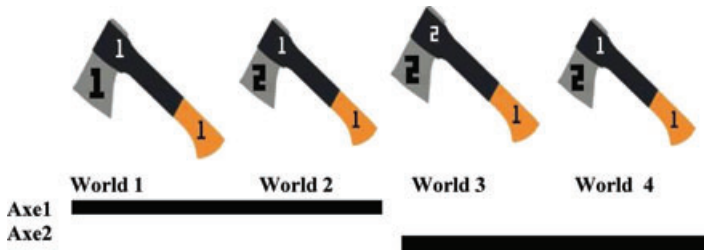
having a property, and that if one object has a property accidentally while the other has it essentially, then the two objects cannot be identical. Abelardianism dispenses with the genuine *de re* modalities that essentialism embraces, and so the argument to plenitude does not apply. If one wishes to avoid plenitude — or at least this source of plenitude — then embracing Abelardianism is a natural move. (In fact, there are a great deal of similarities between Abelardianism and essentialism with plenitude. In particular, where essentialism with plenitude posits multiple items each with distinct modal profiles, the Abelardian posits multiple counterpart relations, thus obtaining the same range of modal profiles. For a detailed discussion of how this kind of Abelardianism about essence might be taken to avoid the problem of plurality of genuine essence with subsequent co-location, see Leslie (submitted)).

Interestingly, however, this is not the move that Forbes makes. Rather, he adopts *absolute* counterpart theory, which holds that there is a single privileged counterpart relation for each object, so that each object has at most one potential counterpart in each world. As his later work (1986) suggests, Forbes wants to remain a genuine essentialist; he does not believe that there are many counterpart relations which can be made salient by context, and so many equally good accounts of the so-called “essences” of things. Thus Forbes does not embrace Abelardianism, but rather adopts counterpart theory primarily in response to the paradox — as a way of replacing the transitive notion of cross-world identity with the potentially intransitive notion of the counterpart relation. But as Forbes (1986) still accepts that an item has some of its properties essentially and other accidentally — and that these two ways of having a property are not mediated by any additional hidden arguments — he still faces the question of why there is but *one* axe here made essentially of, e.g., two out of three of *these* parts, but not another made essentially of two out of three of these *other* (overlapping) parts. Again, a principle of limited variety would be needed to block the proliferation of entities.

Haeccetism and Plenitude

A set-up similar to the Chisholm/Chandler paradox, called the ‘Four Worlds’ paradox (Salmon, 2005 (originally 1981)) is often used to argue for haeccetistic differences between worlds — i.e. the thesis that there are possible worlds that are identical in all qualitative respects, yet nonetheless represent distinct possibilities, because their inhabitants, though indiscernible, are numerically distinct.

This set-up is as follows: consider, as before, a world *w*₁ in which an axe *Axe*₁ is made of *Blade*₁, *Shaft*₁, and *Handle*₁. Further, *Axe*₁ is again essentially constituted by at least two out of the following three parts: *Blade*₁, *Shaft*₁, and *Handle*₁, plus the appropriate kind of third part if needed. Thus *Axe*₁ can be made (again, as before) at *w*₂ out of the following parts: *Blade*₂, *Shaft*₁, and



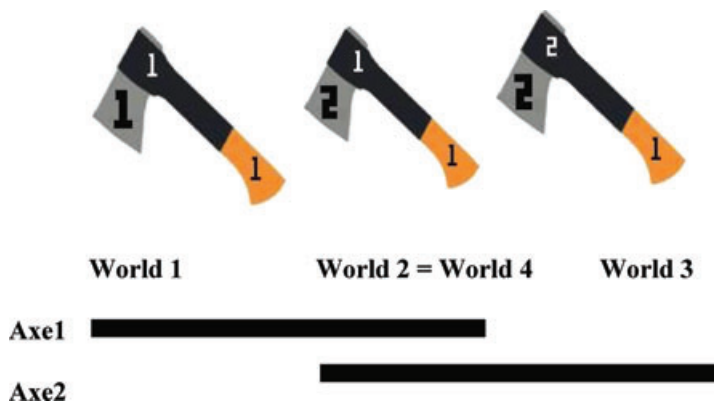
Note: The axes in World 2 and World 4 are made of the same parts, but cannot be identical according to the argument.

Figure 3. An Argument for Haecceitism.

Handle1. Now we are asked to consider world w_3 , in which a *different* axe, Axe2 is made from the following parts: Blade2, Shaft2, and Handle1. Axe2 is essentially constituted by at least two out of the following three parts: Blade2, Shaft2, and Handle1, plus the appropriate kind of third part if needed. Clearly, Axe1 is not identical to Axe2. But now consider world w_4 in which Axe2 is made from the following three parts: Blade2, Shaft1, and Handle1. (See figure 3.) Let us further assume that all four worlds contain nothing except these axes. The argument now goes as follows: w_2 and w_4 represent distinct possibilities, because w_2 contains Axe1 and w_4 contains Axe2, and Axe1 is not identical to Axe2. However, the two axes in these two worlds have exactly the same parts, and since the worlds contain nothing else, the two worlds are themselves qualitatively identical. Thus, possible worlds can differ haecceitistically, i.e. solely with respect to the identities of the individuals within them.

I take no stand here on whether there are haecceitistic differences between worlds or not, however I think that this set-up does not establish this conclusion, even though it is often taken to do so. David Lewis (1986), for example, argues that the set-up pushes essentialists who accept transworld identity and a plausibly tolerant essentialism to an implausible haecceitism. I believe that this is mistaken; in particular, once the connection between essentialism and plenitude has been made, the set-up gives us no additional reason to accept haecceitism at the level of possible worlds.

To see this, note that in order for the above argument to be valid, a hidden assumption is required: w_2 contains Axe1 *and not* Axe2 and w_4 contains Axe2 *and not* Axe1. Once we allow co-located entities of the sort discussed above — as the essentialist should — this assumption is unmotivated. The above set-up can be equally well modeled with $w_2 = w_4$, without violating any of the articulated premises; we only need to suppose that this one world contains both Axe1 and Axe2. (See figure 4.) Again, this does not show that there *cannot* be haecceitistic differences between worlds, but it does show that the essentialist can easily handle this case without recourse to haecceitism about worlds.



Note: In light of plenitude, there is no need to posit a fourth world.

Figure 4. A Response from Plenitude.

Conclusion

The Chisholm/Chandler/Four Worlds paradoxes have been misdiagnosed, partly because of (i) a confusion between the coherent notion of a variably realizable essence and the incoherent notion of variable essence and (ii) a blind spot common to most (but not all) essentialists and anti-essentialists. The very distinction between two ways of having properties and including parts — the essential way and the accidental way — makes for many candidate essence/accident profiles that differ not in respect of what properties and parts they cite, but only in respect of which of these properties and parts are had accidentally and which essentially. The majority of these candidate essence/accident profiles would seem to be admissible in that there seems no metaphysical basis for an invidious distinction between one such profile and another. But then whenever one profile is instantiated so also are the others, and we have multiple co-located objects, differing only in their essences. Once this is recognized, these paradoxes do not motivate restricting the accessibility relation between worlds, resorting to counterpart theory, or even adopting haecceitism. However, proper consideration of the paradoxes serves as a reminder of a surprising consequence of essentialism’s core distinction between two ways of having properties and including parts namely massive collocation of things of the same manifest kind, axes, ships.

Notes

1. A precise formulation of what this requirement comes to is tricky, though the oft-cited idea that utterly natural properties be ontologically on a par and

- independent from each other is a potential model. See Yablo (1987) and Leslie (submitted) for discussion.
2. Chisholm's original formulation of the paradox featured two entities rather than one, and originally focused on two men, Adam and Noah. If we retain ships as our example, the set-up would be as follows: consider two ships, and suppose that at each world they swap a plank with each other, so that at the final world in sequence the first ship is made from the same planks that the second ship was made from in the first world, and vice versa. Thus we have two worlds that are qualitatively identical (i.e. the first and last worlds), yet differ with respect to the identity of the two ships. I discuss this aspect of the paradox (though with a simpler set-up), in the final section of this paper entitled "Haecceitism and Plenitude."
 3. It is important to notice that, while these two examples involve original constitution, the paradox can be generated for any cluster of essential properties. (In fact one of Chisholm's formulations involves Adam and Noah.) One simply needs to construct a list of an item's essential properties, and then decide that a degree of toleration is in order. The same paradox will ensue.
 4. See Forbes (1984) for extended discussion, and Salmon (1986) for an extended reply.

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