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# Can Persistence be a Matter of Convention?

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**Abstract:**

This paper asks whether persistence can be a matter of convention. It argues that in a rather unexciting *de dicto* sense persistence is indeed a matter of convention, but it rejects the notion that persistence can be a matter of convention in a more substantial *de re* sense. However, scenarios can be imagined that appear to involve conventional persistence of the latter kind. Since there are strong reasons for thinking that such conventionality is impossible, it is desirable that our metaphysical-cum-semantic theories of persistence be able to account for such scenarios in terms of conventions of the first kind. Later parts of the article therefore investigate whether three of the currently most influential metaphysical-cum-semantic theories of persistence – the endurance theory, the stage theory, and the perdurance theory – can do this. Fortunately, for them, it turns out that all can, though some philosophers have disputed this. However, when we ask how they account for a typical case of "conventional persistence" some problematic features of the theories – having to do with reference, persistence conditions, how they relate, and the epistemology of persistence – are revealed.

## *1. Introduction*

A lump of clay *c* is formed into a statue *s*. A small part of the statue falls off and we decide to repair the statue by adding some new clay. The statue *s* still exists (we presume), but it is now slightly different, due to imperfect restoration, and is constituted by a new lump of clay *c´*, which, though distinct, partly overlaps with the old lump *c* – i.e. *c´* has spatial parts that once were parts of *c*. Another part of *s* falls off and we decide to repair the statue once again. It is now even more different and is constituted by *c´´*

which overlaps with *c* to an even lesser extent. The process repeats itself over and over again until we have a statue *s** (constituted by *c**) about which we do not know what to say: Is it the same statue as *s* or not? The persistence conditions we associate with the statue-concept – saying, among other things, how much change a statue can tolerate during its persistence – are not determinate enough to let us answer the question either way. (The persistence conditions for lumps of clay, however, are more clear-cut: lumps of clay cannot lose any amount of clay.[1])

Suppose, now, that for some reason (e.g. having to do with the value, ownership or some other feature of *s**) we think it important that the question whether *s** is the same statue as *s* receive a determinate answer. We therefore decide to specify, quite arbitrarily, the vague persistence conditions that we associate with the statue-concept a little, so that we put ourselves in a position to say: "Yes, *s** is indeed the same statue as *s*. Statues can undergo such changes!" Had we specified the persistence conditions in a less tolerant direction, we reason, we would have been in a position to say: "No, *s** is not the same statue as *s*. The qualitative changes (alternatively, the constitutional changes – or both) are a little too drastic for the statue to survive. The statue *s** is rather a 'descendant statue' that has *replaced* statue *s*."

How shall we understand this situation? As the scenario is described, it might appear that whether or not *s is* the same as *s** and hence persists through the process of repair depends on *us* and how we arbitrarily specify the persistence-conditions for statues. But is that possible? Can the sameness/persistence through time of a genuinely existing entity really be a conventional matter?[2]

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[1] At least, let us here grant this widely shared intuition; it is of little importance for the purpose of this paper.

[2] Here is an alternative case concerning persons rather than inanimate objects such as statues, inspired by Parfit's reasoning in his (1971, pp. 13 and 24-25): A person *p* develops Alzheimer's and his mental life starts to deteriorate. Suppose we ask "Is the senile person *p** that exists some years later the same person as the person *p* who first developed Alzheimer's?", and that we do not know how to answer this question. Suppose we reason that if we make the persistence conditions associated with the person-concept stringent (requiring a very high degree of psychological connectedness), the answer is "no" (*p** not being *p* but merely one of *p*'s "descendent selves"); but that if we make them tolerant (requiring only a non-branching chain of psychological continuity), the answer is "yes". See also Nozick (1981, p. 69), Johnston (1989) and Unger (1990, pp. 66, 168-169, 239, and 257) for suggestions or explicit claims that the persistence through time of persons is (sometimes, at least) a matter of convention. For rejections of conventional persistence of persons, see Olson (1997) and Merricks (2001b). For suggestions or explicit claims that the persistence through time of inanimate physical objects is (sometimes, at least) a matter of convention, see Nozick (ibid., pp. 33-34), Sider (2001, p. 207), Noonan (2003, p. 18) and Thomasson (2007, pp. 55-59). It is not

*2. Two kinds of convention*

To address the question whether persistence can be a conventional matter in a profitable way we should start off by distinguishing two kinds of convention: (1) conventions having to do with what a certain expression is to stand for or mean (either generally or in certain contexts); and (2) conventions having to do, either directly or indirectly, with whether the world (or part of it) is such that an expression, which is governed by conventions of the first type and is used in a certain context, succeeds in referring or applying (or would refer/apply were it used in the context at issue).

That there are conventions of type-1 is trivial. What a certain expression is to stand for or mean is for us to decide. We can let a proper name "*n*" stand for, or refer to, a certain object *a*, but equally well to a distinct object *b*; and we can let a predicate, such as "*x* is triangular" mean, or express, whatever we want it to. Conventions of type-2, regulating the successful application of words governed by type-1 conventions, are *prima facie* suspect, however. At least, they look suspect if: (a) one does not wish to think of the world merely as a *model* or *version* à la Goodman (see his *Ways of Worldmaking*, 1978), but as the real thing out there, i.e. the very "thing" we are out to give a correct version *of*; and (b) one is, as I am in this paper, concerned with those objects in the world which – traditionally at least – are not regarded as "social constructs",[3] but as inanimate or

always clear, however, just how "deep" the proponents of conventional persistence take the conventionality at issue to be, how *worldly* as opposed to *wordy* it is. Consider this Nozick quote: "it is different, though, with persons [as compared to inanimate objects], and especially with ourselves; we are not willing to think that whether something is us can be a matter of (somewhat arbitrary) decision or stipulation" (ibid., p. 34). As Nozick formulates the matter here, the conventionality at issue would seem to be quite deep and worldly – otherwise, why would he say that we are bothered by such conventionality, in relation to ourselves, at least? Yet, does Nozick really wish to hold that the conventionality he endorses for both animate and inanimate objects (pp. 34 and 69) *is* of such a far-reaching kind? I think his theory, like several of those referred to above, is rather obscure in this respect. One aim of this paper is consequently to distinguish clearly between distinct kinds of conventionality, and to show that "conventional persistence" is sensible only if a very shallow and wordy kind of conventionality is at issue – *irrespective* of whether we are concerned with inanimate or animate objects. My arguments here will be perfectly general.

[3] By objects that are traditionally regarded as "social constructs" I mean, roughly, such objects of traditional social ontology as can be found, e.g., in Searle's *The Construction of Social Reality* (1995, esp. pp. 43-51) – i.e. "objects" such as states, governments and legal courts. It can be questioned whether they, in contrast to their physical bases, really *are* out there. If the reader thinks, as I do not, that statues should be included in this category, I ask her or him to substitute a more traditional "physical" object for the statue in the introductory example.

animate physical realities, be they natural objects such as stones, trees and persons, or artefacts such as cars, tables and statues.

Let me briefly illustrate the general awkwardness of type-2 conventions – at least, as applied to the traditional physical world. Consider the expression "1m long". We first decide that this expression is to stand for the distance travelled by light in a vacuum in 1/299,792,468 of a second. This is a convention of the first sort. (It is the current SI definition of the metre.) We could very well have decided to let the expression stand for another distance,[4] or something completely different all together. But *given* that we have assigned this meaning to the expression, if we ask of a certain physical entity *e* whether it is 1m long, the answer cannot be a matter of type-2 convention. Entities in the world have their length independently of us.[5] Hence, whether the predicate "is 1m long" is *satisfied* by *e* – whether the sentence "*e* is 1m long" is *true* or not – is not for us to decide given the convention of the first kind governing the meaning of "1m long". The world makes this "choice" for us, all by itself.

Turn now to the expressions "persists" and "the same". It is true, but unexcitingly so, that we can give these expressions the meanings we want. Hence, in this fairly uninteresting *de dicto* sense of conventional persistence – a sense relating to the meaning of the words "persistence", "persists" and "the same" – persistence can be, indeed is, a matter of convention. However, when philosophers, including myself in this paper, ask whether persistence can be a matter of convention, we are, on the face of it, *using* the expression "persistence", not mentioning it. So if we *only* intend to be investigating conventional persistence in the *de dicto* sense, and yet proceed by using, rather than mentioning, the term "persistence", we risk confusion. Moreover, if it is only the *de dicto*

[4] Of course, the definition is constrained by earlier definitions of the expression, such as the one made in terms of the distance between two fine scratches on a platinum-iridium bar stored under controlled conditions in Sèvres in France, in conformity with the wish to have some continuity in the meaning of the expression. Also, the definition is not arbitrary in that there are practical reasons for exploiting the speed of light in a vacuum in the definition (if one wants the expression to pick out a stable unit length), since the speed of light in a vacuum is a constant quantity. But it is nevertheless true that we *could have* decided to let the expression "1 m" stand for something completely different, if we so wished.

[5] That is, independently of us in the sense at issue. We can make, say, a piece of rubber band longer by *pulling* it physically. And we could, of course, conventionally issue a law that obliges everyone to physically pull their rubber bands with the result that some rubber bands (the elastic and already rather large ones) turn out to measure 1 m. Conventions of type-2 are not intended to include scenarios of the latter kind; they are to be understood as conventions which have their effects on the world in a more *abstract* way, through *stipulations*, rather than by being mediated by ordinary concrete physical processes.

sense of "conventional persistence" that is meant, why focus exclusively on persistence? Why not also declare that *mass* is a matter of convention? However, supposing that we, at least sometimes, take the material mode of speaking seriously – and given that "persistence" has a certain type-1 conventional meaning assigned to it in the phrase "conventional persistence" – then, in those circumstances, "conventional persistence" ought to pick out *type-2* conventionality. At any rate, it is this substantial, *de re* understanding of "conventional persistence" that is philosophically and metaphysically interesting. Moreover, it is a sense of "conventional persistence" that the case of the repaired statue, and the like, might be interpreted as involving: let "the same" and "persists" mean *numerically identical* and *endures*, respectively (cf. Hawley, 2001, pp. 6 & 151; Merricks, 2001, pp. 176-179).

At any rate, in this paper I will scrutinize the possibility of conventional persistence in the *de re* sense (conventionality of type-2). I will present three popular pairs of meaning assignments to the expressions "persists" and "the same" (Section 3). I will then argue, in Section 4, that on each of these assignments *de re* conventionality is to be rejected. Given this rejection, we need to explain what is going on in the case of the repaired statue, without invoking conventionality of type-2, as it would appear that such a scenario could very well occur.[6] In Section 5, I therefore ask whether any of three of the currently most popular metaphysical-cum-semantic accounts of persistence – the endurance theory, the stage theory, and the perdurance theory – can provide the desired explanation. It turns out that all of them can (*pace* Hawley, 2001, p. 151; Merricks, 2001, pp. 176-179). But when we look into how they account for a typical case of "conventional persistence" some surprising and problematic features of the theories – having to do with reference, persistence conditions, how they relate, and the epistemology of persistence – are revealed. I discuss these features in Section 6.

[6] It is sometimes suggested that courts do occasionally rule (make a somewhat arbitrary decision) on the diachronic history of a thing. Merricks writes: "we often assume that the identity over time of inanimate macrophysical objects can be somewhat conventional. For example, we might, for practical purposes, leave it up to the courts to 'decide' a case of statue identity over time that – prior to any judicial decree – is in some sense borderline." (Merricks, 2001a, p. 176). Whether courts actually do issue such verdicts I leave to the jurists to answer. I should also say that I do not think that vagueness of the relevant persistence-conditions is required if the issue of conventionality is to arise: someone might argue that we may change determinate persistence conditions too, i.e. not just specify vague ones.

*3. Distinct meaning assignments to "persists" and "the same"*

Philosophers disagree about what the expressions "persists" and "the same" should be taken to mean in diachronic contexts where we are referring to physical objects.

So-called endurance theorists (e.g. Strawson, 1959, ch. 1; Wiggins, 2001, ch. 1 and 6.9) think that "persists" should be taken to mean something like "being wholly present as the same entity at distinct times". Here the expression "wholly present" is to be contrasted with "partly present": a temporally extended process is partly present at a time shorter than itself. The expression "the same" is regarded by endurance theorists to signify strict *numerical identity* – i.e. the absolute (non-relative) relation which every entity bears to itself and no other object, which is reflexive, symmetrical and transitive, and governed by Leibniz's Law, i.e. the principle saying that for all objects *x* and for all objects *y*, if *x* is numerically identical with *y* then whatever is true of *x* is true of *y* and vice versa.[7] (Leibniz's Law is sometimes put in terms of quantification over properties; I think that the more general, ontologically neutral version is preferable (cf. Wiggins, 2001, p. 25).)

Stage theorists (e.g. Sider, 2001; Hawley, 2001) reject this "endurance" reading of the expressions. For various reasons they do not believe that objects are wholly present at distinct times as numerically the same entity. On their view, an object is wholly present as numerically the same entity at one time (instant) only; so if we give the expressions

[7] Does such a strict reading of "same" (according to which the term expresses numerical identity) mean that we cannot consistently speak of an object persisting (i.e. enduring) through change? No. It is always true to say of an enduring object *o* which is first, say, straight (at time *t*), then bent (at later time *t**), that it is straight at *t and* bent at *t**. "*o* is straight at *t* and bent at *t**" may be parsed as "*o* is-at-*t* straight and is-at-*t** bent", or, if one has no scruples about time-indexed predicates as opposed to time-indexed copulas, it can be parsed as "*o* is straight-at-*t* and bent-at-*t**". The time clauses can even be deleted if the copula is read as being tenseless. Saying that an object is tenselessly straight and tenselessly bent entails no contradiction. For detailed discussions of these issues, see my (2007) and (2010). This kind of response to the argument from Leibniz's Law against endurance through change arguably presupposes the B-theory of time. But I do not think that this is a serious limitation or defect of it, because it is difficult to see how endurance (or any kind of persistence) can be entertained if presentism is presupposed: *prima facie*, given presentism there are no cross-temporal relations, and that includes the identity relation. However, it would be very interesting to see self-professed presentists develop *detailed* accounts of the way endurance (and other accounts of persistence) can be squeezed into the presentist framework. So far presentists like Merricks (1994) and Zimmerman (1998) have relied on rather loose and intuitive claims to the effect – vis-à-vis our object *o* and supposing *t** is present – that *o* is bent but *was* straight. The interesting question, though, is what now makes it the case that it was *o* that was straight at *t* when *t* was present. Indeed, what does "*t*" pick out when the only time that exists is *t**?

"persists" and "the same" the meanings endurance theorists advocates, much of what we say will turn out to be false.

According to stage theorists, persistence-utterances (i.e. utterances of sentences containing expressions such as "persists" and "the same") can only be true if the expressions are taken to have a weaker reading. On their account, "persists" should be regarded as meaning something like "has temporal counterparts at distinct times", while "the same" (in diachronic contexts) should be taken to mean "bears the temporal counterpart relation to".[8] However, as stage theorists do not think that there is just one kind of temporal counterpart relation but many kinds (as many as there are substance kinds), "persists" and "the same" must, strictly speaking, be taken to be highly ambiguous expressions with different meanings in different contexts.[9] Still, it is useful to treat these distinct meanings of the expression as cases of a single "exdurance reading", as we may call it (following the terminology of Haslanger (2003)), as they all have to do with having temporal counterparts.

Perdurance theorists (e.g. Quine, 1960, p. 171; Lewis, 1986, pp. 202-204) agree with stage theorists that objects do not endure, but respect the endurance-theorists' intuition that "persists" and "the same" are to be taken to be about numerical identity across time. However, as they reject metaphysical endurance, and as they believe our persistence-utterances are true, they think that when we speak of objects persisting through time "persists" should be taken to mean what the expression means according to endurantists when we speak of persisting processes. That is, they would say that "persists" means "is partly present at distinct times as the same entity", and in saying this

[8]Alternative terminologies here include "is related by loose identity to" (Varzi, 2001– a terminology which goes back to Butler, 1736) and "is related by genidentity to" (Reichenbach, 1956, p. 38).

[9] This aspect of the theory is not always fully appreciated, and stage theorists themselves occasionally speak as if these expressions had a univocal meaning. But in order to avoid straightforward contradictions, stage theorists *must* hold that the expressions are ambiguous. Their fundamental position is that objects are numerically identical with instantaneous, *non*-persisting stages and yet are themselves *persisting* entities. The way out of contradiction here is to hold that "persists" expresses distinct meanings when associated with distinct sortals (cf. Sider, 2001, pp. 200-201). As an account of ordinary language (disregarding the metaphysics of the theory), I think the theory is false. If I am told that my car, located at a certain time, is not located at any other time (as numerically the same entity), then on the basis of ordinary language, I would deny that "my car is a persisting entity" is true – even if I were also informed that it has car-counterparts at other times. Stage theorists may retort that even if these are not the meanings we actually give the expressions, they are the meanings we *should* give the expressions – i.e. by invoking new conventions of the type-1. It can be questioned, though, whether such a plethora of persistence concepts is desirable, even if objects do not endure. A person, e.g., will turn out to "persist" in a great many senses on this theory (see my 2008).

they would substitute "partly present" for "wholly present" but allow "the same" express numerical identity.[10] With this reading of "persists" perdurance theorists are in a position to identify persisting objects with *four-dimensional aggregates* of the momentary entities that stage theorists treat as objects. That means that, according to perdurance theorists, when we speak of an object *a*, located at a certain time *t*, being the same as an object *b*, located at a distinct time *t**, the utterance is true if *a* and *b* are numerically the same four-dimensional object, extending over both times.[11]

Before I move on I should address a worry that may arise in relation to the different readings of "persists" and "the same" presented above. If endurantists, perdurantists and stage theorists take themselves to mean different things by "persists" and "the same", does not that mean that they are talking past one another when discussing persistence? Strictly speaking, I think it does. But there are ways out of this predicament. One way, I think, is to artificially allow – for the purpose of reaching common ground in the discussion – very weak or disjunctive readings of the expressions; then, in the next

[10] It is possible to introduce a weak reading of "persists", neutral between the endurance and perdurance readings, according to which "persists" simply means "is present at distinct times as numerically the same entity", where "present" is to be read as being compatible both with *being wholly present* and *being partly present* (Lewis, 1986, p. 202). However, I will for the most part ignore this weak reading: to address it would be redundant given that the two more fully specified forms are discussed.

[11] Again, as an analysis of ordinary language, I think this theory is false. Sortal predicates like "is a boat" we take to apply to three-dimensional entities, not to four-dimensional ones. I believe this is indicated, among other things, by the fact that sortal predicates often come associated with *dispositions* that cannot be ascribed to four-dimensional entities (see my 2009a). Moreover, when we introduce *names* for ordinary objects, we do not (at any rate, *I* do not) intend to baptize four-dimensional entities, but rather intend to baptize three-dimensional ones that are wholly present in front of us. This intuition receives support from the fact that we say such things as "I dub this *boat* (i.e. an object with certain dispositions, i.e. a three-dimensional entity) 'Al'". Also, notice that if perdurantists are right (in their metaphysics and semantics), if I buy a used boat, I do not in fact buy a *whole* boat but only a *proper part* of a boat, because I do not come to own the temporal parts of the boat the former owner owned. Perdurance theorists may perhaps insist that I do in fact come to own the whole four-dimensional boat at the time of purchase – albeit in a *derivative* sense. I derivatively own the whole boat at the time of purchase because I non-derivatively own the temporal part of the boat located at the time of purchase (cf. the perdurance theorists' general account of intrinsic and relational change; see e.g. Lewis, 1988). But surely it is counter to ordinary ways of speaking, and legal discourse, to talk about derivative ownership of objects and non-derivative ownership of temporal parts. Again, perdurance theorists may insist that even if this is not how language actually works, it *ought* to do so, and therefore we should revise our conventions of the first kind! But if this is their position, they must concede that it cannot be strictly *we* (three-dimensional temporal parts on this view) who adopt the revised conventions, for if personal pronouns now pick out three-dimensional entities and the conventions are later changed so that they pick out four-dimensional entities, the "we" who have the first set of conventions are not identical with the "we" (4-D aggregates) who have the second set. (Of course, *after the revision* the 4-D aggregates are in a position to say, derivatively – i.e. in virtue of having temporal parts, at the later times, that say it primarily (in succession) – that "they" had other conventions before, derivatively – i.e. in virtue of having temporal parts at earlier times that had these conventions primarily.)

step, one may argue for one's preferred reading (i.e. for one of the disjuncts). For example, one may decide (type-1 convention) to initially agree on letting "persists" mean simply "is present, in one way or another, at distinct times" (cf. note 10), or even more weakly (in order to make room for stage theory) "has at least temporal counterparts at distinct times". This is the strategy used in my (2009b, p. 46). In this paper, however, I will simply ignore these artificial and diluted readings and instead focus on the specific disjuncts (i.e. focus on the endurance/perdurance/stage-theoretical readings presented above).

*4. Conventional (type-2) endurance, exdurance or perdurance?*

We have now surveyed the most influential views about what type-1 conventions govern – or at least *should* govern – the expressions "persists" and "the same". The issue now is whether it can be a matter of type-2 convention whether the expressions apply or not in a certain situation given the above specified meaning assignments.

To explore this issue consider an object *a* that is wholly present at some instant *t* (i.e. let *a* be three-dimensional). Assume that *a* is physical in the sense indicated in Section 2. Assume also that it is a convention of type-2 that *a* persists, i.e. that "*x* persists" is satisfied by *a*, where "persists" is, initially, given the *endurance* reading. If it is a convention of type-2 that *a* persists in this sense, it is a convention of type-2 that *a* is numerically identical with some object *b* wholly present at some later/earlier instant *t´*. (That is, it is a matter of type-2 convention that an utterance of the sentence "*a* = *b*" is true, where "*a*" denotes *a*, "*b*" denotes *b*, and "=" expresses numerical identity).

I reject the thesis that endurance can be a matter of type-2 convention for the following reasons:

> (i) The thesis imputes to us some sort of *magical power*: we dictate – at a distance, without being in physical contact with object *a* – whether or not *it* is identical with object *b* and consequently located at the space-time locations that *b* is located at. The notion that we possess such a power is just fantastic. We may be able to affect how long a thing endures by physically manipulating it or its surroundings. We could put it in box filled with cotton wool or attach a bomb to it. But we can hardly

affect how long a thing endures simply by "legislating" on the matter – e.g. by legislating the persistence conditions of the entity in question (cf. Hawley, 2001, p. 6; Merricks, 2001a, p. 178).

(ii) The magical power in question seems to involve some sort of *backward causation* (cf. ibid.). At least, if it is decreed that *a* is numerically identical with *b* after *t´*, the effect of the decree (*a*'s existence at *t´*) must occur before the decree has been made. Needless to say, backwards causation is highly contentious. Various metaphysico-logical problems are raised by it (see e.g. Mellor, 1998, ch. 12).

(iii) If it is a type-2 convention that *a* = *b* (supposing we decide that *a* = *b*), then it is true of *b* that it is conventionally identical with *a*. (The semantically interpreted predicate "is conventionally identical with *a*" is then true of *b*.) By Leibniz's Law, it is therefore true of *a* that it is conventionally identical with *a*. (The semantically interpreted predicate "is conventionally identical with *a*" is then true of *a*). But *a* can hardly be *conventionally* identical with *a*. (The semantically interpreted predicate "is conventionally identical with *a*" can hardly be true of *a*; alternatively put, the semantically interpreted sentence "*a* = *a*" can hardly be true by convention.) Hence we must reject the idea that it is a convention that *a* = *b*. (This is an adaption of Evan's (1978) argument against vague identity. Notice that when the argument is applied to conventional identity, objections to it centring on the number of truth values presupposed are avoided.)

(iv) Contrary decisions could take place, either later (by the same people), or simultaneously (by different people). Given type-2 conventionalism, these decisions would render *a* and *b* in a *contradictory state* (unless one decision, for some reason, overrules the other): *a* and *b* would both be and not be numerically identical with each other. One decision would force *a* and *b* to be one and the same object, the other decision would force them to be distinct. The world can hardly be contradictory, however.

(v) The thesis that it is open to us to choose either that *a* is identical with *b* or is not identical with *b* is refuted by *the necessity of identity*. Suppose we (once and for all) decide that $a = b$. Then *a is b*, given the conventionalist thesis. Granting that "*a*" and "*b*" are rigid designators, we have: $\Box(a = b)$ (Kripke, 1971 and 1980). But then we could not have decided that $a \neq b$. Such a decision would mean – given conventionalism – that *a* is *not* identical with *b* in the counterfactual world in question (where we decide that $a \neq b$); but if $\Box(a = b)$ there is no such world.

(vi) On the conventionalist thesis, whether *a* and *b* are related by identity does not follow from *a* and *b* themselves but from something external to them: the convention makers. Accordingly, the identity relation is an external relation (at least, when it obtains by convention). But external relations are contingent (Armstrong, 1997, p. 87). So the identity relation, which holds with necessity where it holds,[12] cannot be external. It must be an *internal* relation, i.e. a relation that follows from the "relata" themselves and nothing else (cf. Wiggin's *Only a and b rule*, 2001, p. 96). Therefore, *a* and *b* cannot be related by identity in virtue of convention.

The thesis of conventional endurance is to be rejected, then. Granting this rejection, I think the ongoing metaphysical debate about the existence of enduring entities ought to be deemed a genuine one. There is a fact of the matter *independently* of us: either there are enduring entities or there are not.[13]

[12] For a simple formal derivation of $(x)(y)((x=y)\rightarrow\Box(x=y))$, see Kripke (1971). Conventionalists must show that there is something wrong with the derivation. (It should be noticed here that the proposition that the identity *relation* holds with necessity, where it holds, is compatible with the proposition that there are contingent identity *statements* involving *non*-rigid designators; again, see Kripke (1971).)

[13] Some (e.g. McCall & Lowe, 2006) would claim that the issue is nevertheless not a genuine one, because they hold that the issue is merely *verbal*: they think that endurance terminology is fully translatable in terms that do not involve any enduring entities but only instantaneous ones and four-dimensional aggregates thereof, and vice versa. They therefore hold: "there is 'no fact of the matter' as to whether we live in a 3D or 4D world. Instead, one can freely choose whether to describe it in 3D or 4D terms. Either way, it's the same world." (ibid., 570). I think this thesis is false (because if *a* endures, "*a*" picks out neither anything instantaneous nor anything that can be reduced to a sum or set of instantaneous things), but a full defence of this will have to wait for another occasion.

Suppose now that, as a mind-independent fact, there are no enduring, physical objects, but that as a matter of type-2 convention, the object *a* (and others) nevertheless persists through time, granted that "persists" is given the stage-theoretic, *exdurance* reading. We have seen of course that, strictly speaking, talk of *the* exdurance reading of "persists" is unwarranted (Section 3). In order to specify a certain sortal-specific exdurance-reading, we must either explicitly say what the sortal-specific reading is or pick out the referent *qua* object falling under a certain sortal-term, such as "tree".

Consequently, let *a* be a tree, and let the sortal-specific reading of "persists" be "has temporal *tree*-counterparts at distinct times". If it is a type-2 convention that *a* persists in this sense, there is a tree *b*, at a time distinct from *t*, such that *b* is numerically distinct from *a* but is also such that *a* conventionally bears the temporal tree-counterpart relation (which is symmetrical, reflexive but may fail to be transitive (Sider, 2001, pp. 204-205)) to it.

But can it really be the case that *a* bears the temporal tree-counterpart relation to *b* by type-2 convention? To answer this question – not by simply announcing a general distaste for conventionality of type-2, but by addressing the question specifically – we first need to get some idea of what a typical temporal counterpart relation like the tree-counterpart relation is supposed to be.

Theodore Sider has the following to say to about temporal counterpart relations in general:

> The temporal counterpart relation is the same relation used by the worm theorist [perdurance theorist] to unite the stages of space-time worms [four-dimensional aggregates of stages/temporal parts]. Also known as the 'genidentity relation', the 'unity relation', the 'I-relation', and so on, it may be analyzed in some way (in the case of persons perhaps in terms of memory or bodily continuity), or taken as primitive; the stage theorist has no particular commitment to any of these alternatives." (Sider, 2001, p. 194) [Notice that Sider here quite sloppily talks about *the* temporal counterpart relation although he is committed to there being different kinds of counterpart relations (ibid. pp. 200-201)]

This rather sparse elucidation is, I think, a little confusing. Most perdurance theorists accept the principle of unrestricted mereological composition (see e.g. Goodman, 1951,

ch. II: 4; Lewis, 1986, p. 213), as does Sider himself (Sider, 2001, pp. 121-132). According to this principle *any* arbitrary class of entities has a mereological sum. Thus the relation that "unites" the stages of a space-time worm – no matter what sortal that worm may fall under – into a four-dimensional whole (mereological sum) is simply the unrestricted composition relation. Sortal-relative temporal counterpart relations can hardly be identified with *that* relation. For one thing, it is completely general. Moreover, it relates a mereological whole with its constituting parts. Temporal counterpart relations, by contrast, relate entities that do *not* stand in a whole-part relation to each other, even if they are all parts of the same four-dimensional whole.

However, the perdurance theorist David Lewis has maintained (1976/1983) that in the special case where stages/temporal parts compose (by unrestricted composition) a four-dimensional *person*-aggregate (i.e. an aggregate satisfying the predicate "*x* is a person"), the stages of the person are all interrelated by *mental connectedness and continuity*. This relation of mental connectedness and continuity Lewis calls the "R-relation." He does not analyze what this connectedness involves in depth, but he does say that it involves relations of similarity and causal dependence between the mental states (or quasi-mental states) of the stages (ibid., p. 56).[14] The continuity component simply imports the idea that there are no major, sudden changes or gaps in the "mental flow" realized by the stages interrelated by mental connectedness. Now, it is partly in virtue of the holding of the R-relation between the stages of certain four-dimensional aggregates that these aggregates deserve to be called "persons". Moreover, in virtue of being stages of numerically the same four-dimensional person, the stages are interrelated by the I-relation – a relation Lewis identifies with the R-relation. Thus Sider's reference to the I-relation suggests that the different kinds of temporal counterpart relation may be understood on this model concerning persons.

Following this model – supposing that stage theorists do not wish to go primitivist[15] – the temporal *tree*-counterpart relation should reasonably be understood as involving,

[14] Apparently Lewis is more or less adopting Parfit's (1971) definitions of "mental connectedness" and "quasi-mental state".

[15] Hawley (2001, ch. 3) seems to adopt something like the primitivist move, however. She claims that temporal counterpart relations (in her terminology, the relations that "stick" stages together into persisting objects) are *non-supervenient* relations, relations that yield immanent causation, spatiotemporal continuity and similarity. But she also says that these non-supervenient relations hold *naturally*. The persistence of a

and only involving, spatio-temporal continuity, causal dependence and similarity in the respects that are relevant for trees (whatever those are), as this is probably how perdurantists like Lewis would describe the *tree* I-relation.[16] (Notice that this means, in effect, that the tree-counterpart relation involves the same aspects that our persistence conditions for trees involve, regulating how much/little continuity in space and time is allowed, how much change is allowed, and so on.)

So, might it be a conventional fact of type-2 that *a* and *b* are related by the temporal tree-counterpart relation thus understood? The relation turns out to have many components, which complicates matters somewhat. Take the causal dependence component first. Notoriously, the meaning of the expression "causal dependence" has not been agreed by all. There is no room to survey the leading analyses here; the important point for the present purpose is that although philosophers disagree over the exact nature of the type-1 convention governing "causal dependence" (or the type-1 convention that *should* govern the expression), few would suggest that it is a type-2 convention that the expression applies in a certain situation, given their preferred analyses of the expression. Unless one is an idealist about causal dependence, one will robustly reject the idea that it is for us to decide whether there *is* a causal dependence between two entities *a* and *b* (which may derive from the causal dependence among their respective properties or between the states of affairs of which they are parts). Moreover, idealists about causal dependence need to answer objections analogous to objections (ii) and (iv) to conventional endurantists presented above.

Similarity is also a highly tricky notion, and evidently I cannot address it in any depth here. One thing is clear, though: the similarity at issue is not some kind of *subjective* similarity, having to do with how similar two entities *appear* to be – although this kind of similarity may be a sign that the similarity at issue obtains. The similarity in question here is instead connected with the issue of whether a (potentially) persisting object is changing or not *out there* in the world, i.e. whether it has different *properties* at

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thing is thus a natural, non-conventional matter for her. (It would appear that if the relations held conventionally, they would not be non-supervenient, for then they would supervene on human decisions.)

[16] A similar line of reasoning can be found already in the work of David Hume (1739/1978), although he apparently denied that the phenomena yield true persistence: "[…] the objects, which are variable or interrupted, and yet are suppos'd to continue the same, are such only as consist of a succession of parts, connected together by resemblance, contiguity, or causation." (p. 255)

different times. If tree *a* and tree *b* – supposing they are stages, since we are here interested in the stage theory – do not have all their (tree-relevant) properties in common, then they are dissimilar (in respect of treehood). If they are *too* dissimilar, then even if there is a continuous path of trees from *a* to *b* realizing a *gradual* transformation of properties, they are not related by the temporal tree-counterpart relation (given the analysis model in question). In such a situation we are dealing, not with a "single" tree (counting on the basis of stage-theoretic diachronic "sameness", see Hawley, 2001, p. 64) that has changed, but with one tree *replacing* another (perhaps many trees replacing one another successively). This kind of similarity, having to do with change, not *apparent* change, is a *worldly*, "objective" (rather than inner or subjective) kind of similarity that derives from the worldly similarity between objective properties of the respective entities. Now, there is disagreement over whether the worldly similarity of properties (when it is exact) is a matter of one and the same universal being instantiated by the relevant entities or involves a primitive relation of exact resemblance holding between tropes (forming an equivalence class), but the philosophers engaged in this debate do agree the similarity in question must be an *internal* relation (see e.g. Armstrong, 1989, pp. 43-47; Maurin, 2002, pp. 78-94). If they are right, the worldly similarity of the properties "flows" from the properties themselves and them alone. There is consequently no room for an external agent to *impose* this kind of similarity on them, to *make* them similar by type-2 convention.

The expression "spatio-temporal continuity" is perhaps more straightforward than the other notions, at least in contexts where it is said that there is spatio-temporal continuity between two entities *a* and *b* of kind *K*. In such contexts the expression is not meant to indicate that space-time is continuous as opposed to discrete (it can be either). Rather, what is meant is simply that there is a unbroken path *in* or *through* space-time, from the space-time place where *a* is to the space-time place where *b* is, which is filled by entities of kind *K* – entities arranged in such a way that the properties of the successive *K*s constitute a *gradual* transformation of similarity from the space-time location of *a* to the location of *b*. But, again, it can hardly be type-2 conventional that there *is* such a path between *a* and *b*, although it may be vague exactly how much spatio-temporal continuity is required.

In all, type-2 conventionality for the sub-components of the temporal tree-counterpart relation is to be rejected. The question we now have to ask is: Where does this leave the temporal tree-counterpart relation itself?

Had the tree-counterpart relation been identical with its sub-components, we could have concluded straight away that the counterpart relation cannot be conventional. But things are not that simple. The sub-components are many; the tree-counterpart relation is one. Hence they cannot be identical. But, then, what is the relationship between them? I suppose it is not for me to answer this question: the issue is one for stage theorists. However, since I have not found any answer in the literature, I will propose two plausible views on the matter. I shall then point out that on either view it follows that the temporal tree-counterpart relation cannot be conventional, granted the conclusion regarding its sub-components.

On the first view the relation (a token instance of it) may *supervene* on its sub-components. So once the "sub-components" are there (non-conventionally), the temporal counterpart relation is there (non-conventionally). For example, the relation may be identical with the *mereological sum* of its sub-components. If mereological summation/composition occurs independently of human activities, and therefore does not arise through conventions of type-2, but supervenes on the parts as Sider thinks it does (unrestrictedly), then once the sub-components exist (non-conventionally) their mereological sum exists (non-conventionally), and hence the token counterpart relation exists (non-conventionally).

On the second view the relation may not exist in a strong ontological sense, because it is neither identical with the sub-components (which is impossible, as they are many and it is one) nor something out there over and above the sub-components. It may rather be, as it were, a simple and "unifying" *word* which informs us that a *complex* situation obtains in the world: once an entity *a* is related by the relations we have called the "sub-components" to some entity *b*, it is true to *say* "*b* is a tree-counterpart of *a*" (and it is true to *say* "*b* is the same tree as *a*"). So once the complex situation obtains in the world (non-conventionally), the simple word applies (non-type-2-conventionally).

On either account it will follow that the tree-counterpart relation cannot be conventional given the conclusion regarding its sub-components. And the same

conclusion will follow for other choices of sortal-specific temporal counterpart relation as well, if they follow Lewis's model of the personal I-relation. Consequently, I cannot agree with Sider when he writes "it seems that a counterpart theorist cannot accept the existence of 'deep', 'non-conventional' facts about *de re* persistence and modality" (2001, p. 207). On the contrary, given that temporal counterpart relations are understood on the model of the personal I-relation, the question whether or not a certain entity, like tree *a*, persists (tree-persists) must surely be regarded as having a "deep" *non-conventional* answer.[17]

Finally, suppose it is a conventional fact of type-2 that *a* persists, where "persists" is given the *perdurance* reading. If it is a type-2 convention that *a* perdures, it is a type-2 convention that *a* is identical with some four-dimensional object *b* which is partly present at *t* and at some distinct time *t´*.[18] But *a*, we assumed, is a *three-dimensional* object; and a three-dimensional object can be numerically identical with a four-dimensional one neither by convention nor as a mind-independent fact, on pain of being a contradictory entity.

Consequently, let "*a*" refer to a four-dimensional entity – e.g. to *b*. But now there is no need to claim that it is a matter of type-2 convention that *a* perdures: it already does, by its very mind-independent nature.

*5. Accounting for the case of the repaired statue*

I argued in Section 4 that, given the meanings assigned to "persists" and "the same" in Section 3, we should reject the notion that the persistence of a certain arbitrary physical entity can be a matter of type-2 convention. It remains to be seen whether the case of the

[17] It may be that Sider only intends to say that since a stage typically falls under several sortal concepts, associated with different persistence conditions, it is up to us to choose which of these sortals (and hence which persistence conditions) we should emphasize and utilize when describing the persistence of the stage at issue. But if this is all that is meant, then it seems to me that the issue is merely about the ambiguity of the term "persists" and how the term can be disambiguated by the specification of a certain sortal (see the discussions in sections 3 and 5). Such disambiguation occurs at the level of language and should not, I think, be described as a denial of the "existence of 'deep', 'non-conventional' facts about *de re* persistence".

[18] It can hardly be a convention that there *is* material content at the distinct times in question. The conventionality part must be that *a* is identical with the mereological sum, *b*, of the contents at the distinct times.

repaired statue can be accounted for by the metaphysical-cum-semantic theories of persistence without the involvement of such conventionality. If any of these theories cannot provide the relevant account, that will be a point against it. A defender of such a failing theory could, of course, conclude that statues – and other ordinary, similarly changeable objects – are not physical realities after all, but rather "social constructs", fictions, or subjects of a false folk ontology (see e.g. Merricks, 2001a, pp. 176-179). However, I think such a conclusion would be less credible than the rejection of the metaphysical-cum-semantic theory in question.

Below follows what I think a *perdurance* theorist ought to say about the case:

> The meaning of the crucial expressions "the same" and "persists" remain fixed in "*s* is the same statue as *s**" and "*s* persists through the whole repair process" when we specify the persistence conditions for statues in this or that direction. "The same" continues to mean *numerical identity* – which, remember, is absolute, entailing that an entity *a* cannot be numerically the same *F* as an entity *b* and fail to be numerically the same *G* as *b*, if *a* or *b* is a *G*.[19] "Persists" continues to mean *perdures*. However, the key point here is that the references of "*s*" and "*s**" are not specified initially, because the persistence conditions for statues are vague. Thus, if we, the persons in the scenario, thought that by specifying the persistence conditions for statues in the tolerant direction, we thereby *made* a certain entity (the supposed fixed referent of "*s*") determinately persist through the whole repair process, we were deluding ourselves.
>
> The reason for the indeterminacy of reference is this: "*s*" was introduced as a name for a *statue* – more specifically, as a name for a statue initially constituted by lump of clay *c*. A statue, on our view, is a four-dimensional entity whose temporal parts have certain intrinsic and relational properties and are interrelated by the *statue* I–relation. The statue I-relation requires suitable spatiotemporal, causal and similarity relations to hold among the temporal parts of a statue. But if it is vague what changes a statue can survive (because the persistence conditions are vague), it

[19] Geach (1967) thinks that identity can be sortal-relative, but sortal-relative identity is incompatible with Leibniz's Law; see Wiggins (2001, ch. 1).

is vague what the suitable relations are. For example, if it is vague what intrinsic changes a statue can undergo, it is vague what the relevant similarity relations are. Consequently, it is vague what the statue I-relation is. And since a statue is a four-dimensional aggregate whose temporal parts are interrelated by the statue I-relation, i.e. is a four-dimensional entity complying with the persistence conditions for statues, it is vague what four-dimensional aggregates are statues. (Remember here that we endorse unrestricted mereological composition. Thus along the space-time path under consideration, along which *c*, *c´*, …, *c** follow upon each other, there are many, many overlapping four-dimensional aggregates of different sizes that begin and end abruptly.)

Consequently, before the persistence conditions for statues have been fully specified, many *statuesque* four-dimensional aggregates are potential referents of the name "*s*" (and "*s**"). Some candidate referents include *c** as a temporal part and some do not. But when the persistence conditions for statues are made more determinate (in the tolerant direction), the statue-concept becomes more determinate. That means that the continuous aggregates that include *c* and *c** as temporal proper parts become aggregates that are definitely compatible with the persistence conditions for statues. And since statues cannot have any statues as *proper* parts (as required by the maximality principle, Lewis, 1976/1983, p. 59), any statuesque aggregate that begins with *c* but does not include *c** as a proper part is eliminated as a candidate referent of "*s*".

The reference of "*s*" may still be somewhat indeterminate. This indeterminacy depends on what happens to *c** later. Does *c** change qualitatively? Is it succeeded by a new lump of clay *c***? It also depends on whether those later events are compatible with the more fully specified persistence-conditions for statues. However, we now know that any candidate referent of "*s*" will have to include both *c* and *c** as proper temporal parts. And since we also know that any candidate referent of "*s**" will also have to include *c**, because "*s**" was introduced as a name for a statue temporarily constituted by *c**, we know that any referents of "*s*" and "*s**" will at least *overlap*, in the sense of having temporal parts in common. However, we cannot really conclude, as was done in the scenario, that "*s*" and "*s**"

pick out the *same* statue – not unless it is stipulated that "*s**" picks out a statue initially constituted by *c*, so that the four-dimensional statues that begin their existence with either *c´* or *c´´*,…, (if there are any such statues – that depends on what happens to *c** and later on) are eliminated as candidate referents of "*s**". (The name "*s**" may denote a statue whose existence begins with either *c´* or *c´´*,…, i.e. whose existence begins with a certain temporal part of any of these persisting lumps of clay, and ends after *s*. Just imagine that the repair process continues indefinitely. Thus, *c** may be a proper temporal part of two distinct, but temporally overlapping, perduring statues.)

All in all, then, what we are dealing with in the scenario is merely this. The meaning of "statue" changes as the persistence conditions are specified (type-1 conventionality). This change has the effect of rendering the reference of "*s*" more determinate, so that we know that an acceptable referent of the name is one that persists (perdures) through the whole repair process (as far as the process is described). Hence, no conventions of type-2 are involved.

Below follows what I think a *stage* theorist ought to answer – at least, one who adopts the sortal-relative "I-relation" view of temporal counterpart relations:

The meanings of the expressions "the same" and "persists" change in the scenario. Invoking some harmless artificiality, we can therefore safely allow the references of "*s*" and "*s**" to be initially fixed and to remain constant through the specification of the persistence conditions for statues. In more detail, what happens is as follows.

In the scenario, the name "*c*" was introduced as a name for a lump of clay formed into a statue, while "*s*" was introduced as a name for the statue initially constituted by the lump of clay denoted by "*c*". Since persisting entities, such as statues and lumps of clay, are numerically identical with instantaneous stages, the names of such entities must be indexed to specific instants in order to acquire unique reference (Hawley, 2001, pp. 45-46 & 61). In the scenario, this was done neither explicitly nor implicitly, but that is quite harmless. Arbitrarily choose any stage in the relevant pre-repair space-time area that is both a lump of clay and a

statue as the referent of both "*c*" and "*s*", and let the names be indexed to this specific instant. Do the same for "*s**" and "*c**", but index these names to a specific instant within the relevant, later space-time area.

Now when, prior to specification of the persistence conditions, we ask whether *s* is the same statue as *s**, what we are asking is whether *s* (= *c*) and *s** (= *c**) are related by the temporal *statue*-counterpart relation. However, as the persistence-conditions that we associate with the statue-concept are vague, the meaning of "temporal statue-counterpart relation" is vague. We are therefore not in a position to assign a truth value to the sentence "*s* is the same statue as *s**": we are dealing with a borderline case. But when we specify the persistence conditions for statues (and in effect create a new and more specific statue-concept), the meaning of "temporal statue-counterpart relation" is specified to such a degree that we *are* in a position to assign the truth value *true* to the sentence (derivatively, in virtue of the truth value of the proposition it now expresses).

Notice here that the references of the names can be treated quite unproblematically as remaining constant through the specification of the persistence conditions (in either direction), because one and the same stage can, and does, fall under distinct and "incompatible" sortal concepts. By the latter we mean sortal concepts associated with "incompatible" persistence conditions – i.e. incompatible only if understood as involving *identity*, but not if understood as involving *exdurance* (cf. note 6). Thus, although we decided to let "statue" express the tolerant statue-concept <statue´>, we could equally well have chosen to let it express the less tolerant one <statue´´>: *s* is both a statue´ and a statue´´, but the old and vague statue-concept did not distinguish between these distinct and specific "modes" of being a "statue".

All in all, what happens, essentially, is that the meanings of "same" and "persists" change as we type-1 conventionally specify the persistence conditions for "statues". Thus, only conventionality of type-1 is involved.

Both perdurantists and stage theorists can hence account quite straightforwardly for what is going on in the statue scenario without involving conventionality of type-2.

Endurantists do not have such a straightforward account. However, that does not mean they cannot account for the case without invoking conventionality of type-2 (*pace* Hawley, 2001, pp. 6 & 151; Merricks, 2001, p. 176-179).[20] Indeed they are in a position to make various suggestions, as the following *endurantist* response makes clear:

> We agree with perdurantists that the meanings of "the same" and "persists" remain constant in the scenario, but we disagree about the constant meaning of "persists": according to us it means *endures*. However, although we accept the constancy of meaning of these expressions, we do not have to accept conventional persistence of type-2. We can (1) provide a non-*ad hoc* account of the case by invoking reference-shift/failure. Alternatively, we can (2) claim that the relevant sentences continue to express the same propositions through the specification of the persistence conditions for statues, but hold that these constant propositions, involving fixed referents, do *not* acquire the truth value true/false due to our specification of the persistence conditions for statues.
>
> In more detail, here are the two general ways in which we can account for the case. To begin with, we distinguish between (a) the mind-independent *metaphysical* persistence (endurance) conditions *of* entities falling under the sortal term in question, and (b) the persistence conditions that *we* subjectively associate with the sortal term by primarily associating them with the statue-concept the term expresses. The distinction between (a) and (b) is unfortunately rarely made in the persistence literature. However, conditions of the first kind can be understood as *dispositions* of a certain kind of individual statues – dispositions to endure or not to endure under certain conditions. Conditions of the second kind are human constructs or "ideas" in a loose sense.
>
> Now, suppose (i) that the persistence conditions in (b) are "associated with" the statue-concept/term by being part of, or logically entailed by, some definitional

[20] *Prima facie* the case of the repaired statue might, given the endurance metaphysics-cum-semantics, appear to involve a situation where a convention of type-1 – a convention having to do with what persistence conditions should be associated with the sortal term "statue" – has worldly effects, making it also a type-2 convention: the convention might appear to rule, of certain three-dimensional objects *in the world* falling under the sortal term "statue", whether or not they are related by the relation of *numerical identity*.

core of the concept. (This is a possibility that perdurance and stage theories naturally adopt, and which in any case seems to apply to the concepts expressed by "lump of clay" and "mereological sum".) It will then be *analytically* true that a statue survives such and such change. Consequently, the metaphysical and the subjective persistence conditions will agree (at least, vaguely). This is because the subjective conditions set up necessary criteria for statuehood. An entity whose metaphysical persistence conditions do not comply with the subjective conditions simply is not a statue. Another possibility here is that (ii) the subjective persistence conditions are merely *loosely* associated with the concept/term, in the sense that they are not part of some definitional core of the concept, but only part of a revisable, fallible, and synthetic *theory* about the members of the (fuzzy) extension of "*x* is a statue" – entities in some way picked out irrespective of their metaphysical persistence conditions.

Suppose alternative (i) is correct; then here is a possible description (an instance of (1)) of what goes on (other versions of (1) are possible). There is a three-dimensional object, *o*, initially constituted by *c*, with certain definite metaphysical persistence conditions (supposing here that endurance *de re* cannot be vague[21]). *o* vaguely complies with the initial, vague subjective persistence conditions laid down by the statue-concept, but it complies more determinately with other criteria for being a "statue". Since there are no further three-dimensional statuesque objects initially constituted by *c*, *o* may be regarded as the referent of "s". (Contrast this with perdurance metaphysics, where there are several four-dimensional statuesque candidates competing to be the referent of "s".) However, when we specify the subjective persistence conditions, and in effect create a new statue-concept, demanding that the satisfiers of "*x* is a statue" do survive the kinds of change in question, *o* no longer qualifies as a "statue", because, owing to its metaphysical persistence conditions, *o* cannot survive such changes. In fact, *o* ceases to be just before the last "change" in question. So, given that we now reinterpret the initial use of "statue", where it had the function of picking out a referent for "s", as expressing the new concept, "s" turns out to be an *empty* name –

[21] See e.g. Evans (1978).

a name lacking a referent. (Alternatively, if we allow *o* to remain the referent of "s", the specification of the subjective persistence conditions for "statues" turns out to have nothing to do with *o*, because *o* no longer falls under the term "statue".)

Suppose now that alternative (ii) is correct; then here is a possible description (an instance of (2)) of what goes on (again, other versions of (2) are possible). Statue *s* and statue *s**, picked out irrespective of their metaphysical persistence conditions, are *not* numerically identical with another. As it happens, owing to their metaphysical persistence conditions, satisfiers of "*x* is a statue" cannot survive any intrinsic change. Consequently, statue *s* ceases to be (ceases to endure) as soon as the first piece of clay falls off. Statue *s** comes into being when *c** does. The sentences "*s* is the same statue as *s**" and "*s* persists through the whole repair process" express constant propositions involving fixed referents, through the specification of the subjective persistence conditions – propositions that *remain false* in spite of the activity of the people involved. The people in question are thus in error in two ways. First, they assume the subjective persistence conditions are constitutive or regulative of what it is to be a statue, in the sense that these conditions specify, in part, what is meant by "statue" and hence what is involved in falling under the term. Without this assumption there would be no point in revising the subjective conditions in the case at issue. In fact, however, the conditions are merely part of a fallible theory about the satisfiers of the predicate "*x* is a statue". Secondly, they think that they can specify the subjective persistence conditions in different directions while keeping the references of "*s*" and "s*" fixed, thus *turning s* and *s** into entities with more specific persistence (endurance) conditions. But given their view of the persistence conditions as regulative, that is impossible. Hence, they are wrong *and* befuddled.

Thus, although it is accepted that the meanings of "the same" and "persists" remain the same in the scenario, we do not have to accept conventional persistence of type-2: we can account for the case by invoking either reference-shift/failure or the constant truth or falsity (or some other intermediate truth value, if identity can be vague *de re*) of the constant propositions expressed by the relevant sentences.

It turns out, then, that endurantists, stage theorists and perdurantists can all handle the case of the repaired statue without the involvement of conventionality of type-2.[22] This is good news for them, because, as we saw in Section 4, there are strong reasons to reject such conventionality. On the other hand, the accounts given above of the ability of the theories to handle the scenario reveal some interesting and somewhat problematic features of the theories – as I shall now explain.

*6. Some observations regarding the respective theories' take on reference, persistence-conditions, how they relate, and the epistemology of persistence*

The perdurance response reveals that, on this metaphysical-cum-semantic view, unless we build "subjective" persistence conditions into the very concept of an *F* and make these conditions precise, the reference of expressions such as "this *F*" and "*a*" (if the reference of "*a*" is enforced with the help of expressions such as "this *F*", say, in an act of baptism) becomes highly indeterminate. There will always be many overlapping *F*-like 4-D aggregates around, competing to be the referent of the expression. Consequently, unless we incorporate exact persistence-conditions into our sortal concepts (something we ordinarily do *not* do), expressions such as "my house" or "this person" (or "I"), as used on a certain occasion, will fail to pick out a definite referent. I suppose many will find this aspect of the perdurance theory troubling. Such a relationship between vague subjective persistence-conditions and vague reference does not plague the other accounts.

Moreover, notice that for the perdurance theorist it makes little sense to speak of the *metaphysical* persistence conditions (dispositions) of objects – at least, if four-dimensional aggregates cannot consistently be said to counterfactually persist for shorter/longer periods of time than they actually persist (as I argue they cannot in my (2009a)). For if the proviso just mentioned is correct, we cannot say of a four-dimensional aggregate, *a*, supposedly falling under the statue-concept, that if it had been blown to smithereens at the time it was in fact being repaired, it would have ceased to be at that time (and so persisted for a shorter time than it actually does). (I argue in my

[22] It seems to me, however, that if one accepts Thomasson's (2007, pp. 55-59) semantics (which apparently involves three-dimensional referents) and her specific view of persistence conditions (as involving numerical identity and as being grounded in conventional "co-application conditions" that are *independent* of "application conditions"), then one has indeed to accept that endurance *is* a matter of conventionality of type-2, in spite of her brief attempt (p. 61) to deny this.

(2009a) that such counterfactuals need to be true in order for objects to have dispositions.)The situation is rather that, because of the way the temporal parts of *a* are *actually* laid out and interrelated, *a* complies "restrictedly" – i.e. in the actual world – with the *subjective* persistence conditions entailed by the statue-concept. We cannot say that *a* complies "completely" – i.e. in counterfactual situations – with the subjective persistence conditions. If such a complete match between the entity's metaphysical persistence conditions and our subjective persistence conditions is needed for *a* to fall under the statue-concept, there are no statues on the perdurance account.

Enduring objects (as traditionally conceived) are not subject to this difficulty regarding counterfactuals that involve alternative events and life-spans, as I point out in my (2009a); nor are stage-theoretic objects.[23] However, talk of metaphysical persistence conditions does become rather *empty* in the stage theory. Remember that one and the same stage may stand in many kinds of temporal counterpart relation, and consequently "persist" in many senses. Consider *s* again. In stage theory *s* is a statue´ that statue´-persists through the whole repair process, but it is also a statue´´ that does not statue´´-persist through the whole repair process; moreover, it is (or may be described as) a statue´´´ that statue´´´-persists for an even shorter period of time, and so on. Furthermore, *s* is a lump of clay that lump-of-clay-persists for an even shorter time, and a stage that does not stage-persist at all. So if *s* has any metaphysical persistence conditions, it has many – indeed as many as there are sortals it can fall under.

Endurance theorists have issues too deal with, too. Notice, for example, that, given the endurance view, if we build subjective persistence conditions into the definitional core of our sortal concepts and make these conditions rather precise, there may very well be no entities answering to those sortal concepts. Certainly there will not be any if there are no entities whose metaphysical persistence-conditions obey the subjective conditions, even though entities in the world may in other respects be, say, statuesque or house-like. One may try to argue that such statuesque or house-like entities should nevertheless be counted as statues or houses as they are the best candidates around to be statues and houses. But that is hardly a credible move. If it is an analytic truth that statues do not

[23] However, things get complicated if stages are identified with the mereological sum of their spatial or qualitative parts. I neglect that issue here.

survive such and such change, there cannot be any statues in the world that do: the search for one would be as easy as the hunt for a married bachelor! (Notice, by the way, that if we combine this conclusion with the above observation about perduring objects and subjective persistence conditions, we have the following interesting result: *If we build stringent subjective persistence conditions into our sortal concepts, then, on the perdurance view, this facilitates reference, but on the endurance view such a move makes reference difficult*. Notice also that the issue does not even arise on the stage view – at least, in the variety considered here.)

On the other hand, if endurantists hold that subjective persistence conditions should only be regarded as parts of a fallible *theory* about the entities falling under the sortal concept, then persistence (granting endurance metaphysics) becomes a *hidden phenomenon*. To see this, consider *s* and *s** once more (understood as three-dimensional statues). How will we ever discover whether "they" are numerically identical if we cannot rely on the subjective persistence conditions associated with the statue-concept? Leibniz's law cannot be used as a test here: we do not know whether everything that is true of *s* is true of *s**, and vice versa, because we do not know whether the relation of numerical identity holds between "them". *If* they are identical, everything that is true of *s* is true of *s**, and vice versa, but we do not yet know whether they are identical. Thus we cannot reason that they must be non-identical by exploiting a premise claiming, for example, that *s* is constituted by *c* but *s** is not (at the time that *s* is), as this premise begs the question about their identity (see my 2007). It would seem that in order to discover whether or not they are identical we must know the *metaphysical* endurance conditions of statues, conditions that may or may not allow for certain kinds of change. But how will we ever come to know the metaphysical endurance conditions of statues if these are not pinpointed by the statue-concept?[24]

It would seem that in order to establish the metaphysical endurance conditions we must track when there is numerical identity through certain events; but to do this we must

[24] Notice a further complication here: what is there to preclude the possibility that distinct three-dimensional statues (or houses, or persons, or electrons) are governed by distinct *individual* metaphysical endurance conditions? Philosophers (e.g. Wiggins, 2001) generally seem to presume that entities falling under the same sortal are governed by the same sortal-specific persistence conditions. But if we do not think of persistence-conditions as incorporated into our sortal concepts, that assumption needs to be motivated. Perhaps statue *a* can survive being transformed into a table but statue *b* cannot.

know the metaphysical endurance conditions of the entity in question! How else could we otherwise detect it? Numerical identity as such is an *imperceptible* phenomenon, at least in diachronic situations where the "relata" are three-dimensional: it cannot be ontologically reduced to (is not identical with) spatiotemporal continuity, causation plus similarity relations; nor is it merely a word saying that these relations hold. Numerical identity is an *internal* relation that holds with *necessity* between its "relata", and (quite apart from the specific difficulty of how *one* thing/property/relation can be ontologically reduced to *many* things/properties/relations) the above relations fail to yield this: "Two objects, tho' perfectly resembling each other, and even appearing in the same place at different times, may be numerically different" (Hume, 1739-40/1978, p. 69).

How can an endurantist, who does not take the subjective persistence conditions to be entailed by the concept in question, break out of this vicious circle? I think the best option – and this may not be satisfactory – is to indulge in metaphysical reasoning and try to "get at" the identity relation through *inference to the best explanation*: What is the best, most reasonable metaphysical explanation of the phenomena?

Notice that this problem of persistence as a hidden phenomenon does not affect the other accounts. On the perdurance view, once we know what four-dimensional aggregate "*s*" refers to – i.e. when, among other things, the subjective persistence-conditions for statues have been sufficiently specified – we will also know when *s* begins and ceases to exist in time. On the stage view, once we know what stage "*s*" refers to, and once we have specified the subjective persistence conditions for statues, we have pretty good idea what its temporal statue-counterparts are and for how long *s* statue-persists (granted that we have information on the spatiotemporal continuity, causality and similarity relating to the space-time path in question). On the endurance view, where the subjective persistence conditions are regarded as being built into the statue-concept, if we make the subjective persistence conditions for statues determinate and know what the referent of "*s*" is, we know for how long *s* persists (again, granted that we have information on the spatiotemporal continuity, causality and similarity relating to the space-time path in question). For if we do know that there is a referent there, and if this referent is of a kind whose members do survive certain kinds of event but not others, we will know where the referent of "*s*" ends its life. However, the difficulty in the latter case is one of knowing

whether "*s*" does succeed in referring, and whether there *are* in general any statues; and these problems look as intractable for endurantists as the one just discussed.

*7. Conclusion*

In this paper I have queried whether persistence through time can be a matter of convention. In a trivial *de dicto* sense, persistence can be – indeed is – a matter of convention. However, there are strong reasons to reject conventional persistence in a more substantial *de re* sense. All three major metaphysical-cum-semantic accounts of persistence can deal with the case of the repaired statue without introducing *de re* conventionality, which is positive news for them (especially for the endurance account). But we have seen that the way each theory accounts for this case discloses a range of problems connected with reference, persistence conditions, how they relate, and the epistemology of persistence.[25]

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