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The Tenseless Copula in Temporal Predication

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Abstract:

In this paper I explore how the tenseless copula is to be interpreted in sentences of the form "*a* is *F* at *t*", where "*a*" denotes a persisting, changeable object, "*F*" stands for a *prima facie* intrinsic property and "*t*" for a B-time. I argue that the interpretation of the copula depends on the logical role assigned to the time clause. Having rejected the idea that the time clause is to be treated as a sentence operator, I argue: (1) that if "at *t*" is thought of as being associated with "*a*" or "*F*", then the tenseless copula is most plausibly read as an "is" *simpliciter*; and (2) that if "at *t*" is treated as being associated with the copula, then the tenseless copula is most plausibly understood as expressing a disjunction of tensed copulas. I end the paper by explaining the importance of the issue. I indicate the ramifications interpretation of the tenseless copula has for the so-called problem of temporary intrinsics.

I.

Consider a persisting, changing object *a* that is currently *G* but was *F* ten minutes ago, where "*F*" and "*G*" stand for distinct, determinate and *prima facie* intrinsic properties falling under one and the same determinable.[1] B-theorists will seek to describe the change in *a* in *tenseless* terms, at least when they are engaged in philosophical enquiry.[2] This is because they regard tensed predication (and tensed discourse in general) as *anthropocentric* in that it fails to depict the world *sub specie aeternitas* (as Smart, 1963, pp. 132 & 142, puts it). According to B-theorists, the moment we currently happen to occupy is not metaphysically privileged. All times – times that we would currently describe in colloquial English as past, present or future – and their contents, are

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[1] Roughly, intrinsic properties are properties an object has purely in virtue of the way the object itself is. Putative examples are an object's rest mass and its shape. Examples of non-intrinsic properties include *being an uncle* and *being the highest building in Europe*. General properties like *having a rest mass* and *having a shape* are often called "determinables", while specific properties such as *having rest mass m_o* and *being straight* often are called "determinates".

[2] B-theorists include Williams (1951), Goodman (1951, Ch. XI), Quine (1960, pp. 170-173 & 193-194), Smart (1963, Ch. 7), Mellor (1998), Sider (2001, Ch. 2).

ontologically on a par. Moreover, there are no so-called A-properties, such as *being future*, *present*, and *past*, which times and their contents gain and loose in succession. So far as temporal properties and relations are concerned, there are only B-relations: the relations *earlier than*, *simultaneous with*, and *later than*. Tensed predication is misleading, according to B-theorists. It suggests that the 'present' moment *is* metaphysically privileged, and that things that 'had' a certain property had that property either in a now non-existent past or at an existing time currently possessing the A-property of *being past*.[3] On a correct understanding, tensed predication is merely *indexed* to the moment of time at which the predication happens to be executed, a moment which is just one among other moments interrelated by B-relations.

According to the B-theorist, then, if we want to describe *a*'s changing in a less misleading way (i.e. without insinuating that time "flows"), we should use a language designed to describe temporal reality in a more detached and impartial manner: i.e. a tenseless language. In such a language there is no place for expressions such as "was", "is" (present tense), "will be", "in the past", "now", and "in a hundred years time". Instead the speaker should make use of: verbs and copulas which, while they superficially share the grammatical form of present-tensed verbs and copulas, have been de-tensed (their tenselessness is often expressed by the use of italics); dates and clock times (i.e. B-times); and expressions such as "earlier than", "simultaneous with" and "later than".

For B-theorists, then, the conjunction of (1) and (2) should be used to describe the change in *a* in the requisite tenseless terms:

(1) *a is F* at *t*;
(2) *a is G* at *t´*;

Here "*t´*" stands for the B-time picked out by the use of the present-tensed copula, and "*t*" for the ten-minute earlier B-time at which *a* 'was' *F*.

The interesting question, now, is how we should interpret the tenseless "*is*" in sentences (1) and (2). What does the copula express or mean in tenseless, yet temporal,

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[3] Philosophers of time who, by contrast, "take tense seriously" and hold that the present moment is metaphysically privileged – by either being the only moment that exists or the only moment which has the A-property of being present – are often called "A-theorists".

predication?[4] I shall argue that the answer to this question hinges on the logical role assigned to the time clause.

The argument I shall present is of interest, I think, not only for its own sake, nor yet more generally as part of the project of clarifying the semi-technical language of B-theory. For, as I shall show at the end of the paper, the thesis that the meaning of the tenseless copula hinges on the logical role assigned to the time clause has a bearing on the problem of temporary intrinsics, i.e. the question whether enduring objects can consistently be said, in tenseless terms, to survive intrinsic change in B-time. Elsewhere (Hansson, 2007) I have argued that they can. This paper can be seen as providing the detailed semantic foundation for that claim.

II.

Before arguing that the meaning of the tenseless copula depends on the logical role of the time clause, I want to highlight a reverse relationship of dependence between the tenseless copula and the time clause.

Given that the copula is tenseless, it is not plausible to hold that the time clause functions as a *sentence operator* that operates on the shorter "*a is F*" (or "*a is G*") in a way that indicates the time at which the sentence – or, if you prefer, an utterance of it – is true.

That is, given that the copula is tenseless, (1) and (2) are not plausibly parsed as:

(1^i) at t (*a is F*);

(2^i) at $t´$ (*a is G*).

The reason that (1) and (2) are not plausibly parsed as (1^i) and (2^i) is that the time clauses become redundant. Only tensed sentences, such as "It is [present tense] raining", can have different truth values at different times (cf. Prior's tense logic, e.g. in his 1957). Tenseless sentences are, as it is sometimes put, "eternal" sentences: since they are temporally impartial, they do *not* have different truth values at different times – each and

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[4] Perhaps I should say "in a *prima facie* temporal predication". As we shall see, once we parse (1) and (2) in certain ways it can be questioned whether they actually involve *temporal* predication.

every utterance of a tenseless sentence has the same truth value.[5] (For this reason they are often thought to be highly suitable for scientific purposes.) Hence, if the copula is tenseless, "at t" and "at t'", understood as sentence operators, convey no interesting information. (1) and (2) could just as well be formulated as "*a is F*" and "*a is G*", respectively (cf. Rescher, 1966, p. 80). But everyone agrees that "at t" and "at t'" have *some* kind of informative role to play in sentences such as (1) and (2).[6] Consequently, parsing (1) and (2) as (1^i) and (2^i) is not an option.[7]

III.

If "at t" and "at t'" are not sentence operators, what are they? There seem to be three alternatives. They may be expressions associated with (operating on/modifying/qualifying): (a) the subject expression; (b) the predicate letter; or (c) the copula. With regard to the first two alternatives, I shall argue, the tenseless copula is best understood in one and the same way; whereas, with regard to the last, it has to be read differently.

IV.

Let us start with alternative (a) and parse (1) and (2) as follows:

   (1^{ii}) *a-at-t* is *F*;

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[5] Tooley (1997, Ch. 5) does not agree on this, but he is not a traditional B-theorist. He claims that 'the future' is ontologically open in the sense that later B-times are not real as of earlier B-times. On this basis he maintains that utterances of tenseless sentences containing future B-times lack truth value as of the time of their utterance. I here assume the traditional 'static' block-universe reading of the B-theory of time. Moreover, Mellor, who is a staunch defender of the block-universe reading, does not appear to agree on this either, at least if the sentence lacks a time clause (1998, pp. 93-95). But his reasoning on this point I find somewhat obscure. Given that he allows "*a is F*", read tenselessly, to change truth value over time, it is difficult to see what the difference between the present-tensed "is" and the tenseless "*is*" is for Mellor, although he does maintain that there is a distinction to be made.

[6] Some claim that the addition of time clauses prevents "*a is F*" and "*a is G*" from being incompatible. I think this claim must be qualified though: more on this below, Section *VII*.

[7] If the copula in (1) and (2) is allowed to be present-tensed, it will make sense to treat the time clauses as sentence operators. We would then have: "at t (*a* is [present tense] *F*)" and "at t' (*a* is [present tense] *G*)", i.e. constructions indicating at what B-times the shorter "*a* is [present tense] *F*" and "*a* is [present tense] *G*" (or utterances of them) are true. In that case, if the time clauses are exchanged in (1) and (2), the exchange will result in a truth value change; hence the time clauses will not be redundant. Notice, moreover, that, on this understanding of (1) and (2), the full sentences would be *tensed eternal* sentences. Thus, that a sentence is an eternal sentence does not *entail* – contrary to what is often presumed in the literature – that the sentence is a tenseless one.

(2^{ii}) *a-at-t´ is G.*

When the time clauses are thought of as being associated with the subject expressions the result seems to be that we have names purporting to denote *temporal parts* of *a* located at *t* and *t´*. If we believe that objects persist through time by perduring as opposed to enduring,[8] then this parsing of (1) and (2) makes sense.[9]

Assume that we accept this parsing: now, how are we to understand the copula in (1) and (2)? An important clue here lies in the fact that the addition of extra time clauses that are associated with the copula seems to be ruled out when the sentences are parsed as (1^{ii}) and (2^{ii}).[10] To say that *a-at-t is F* at *t* (where the added "at *t*" qualifies the copula) appears to be not only unnecessary (since we already know that *a-at-t*, which is a temporal part, is located at *t* only, if it exists at all), but a *distortion*, suggesting, as it does, that *a-at-t* is located at times *other* than *t*, times at which *a-at-t* may fail to instantiate *F*-ness. But as *a-at-t* is located at *t* only, *a-at-t* cannot fail to be *F* at some time differing from *t*.

I think it is quite reasonable, therefore, to regard the tenseless copula, under alternative (a), as saying that *a-at-t* and *a-at-t´* are *with no qualifications or modifications whatsoever F* and *G*, respectively – that is to say, that *a-at-t* and *a-at-t´* simply are, respectively, *F* and *G*. In other words, I suggest that the tenseless copula in (1) and (2), under alternative (a), is to be understood as a copula *simpliciter*. It says what the copula says in the mathematical and tenseless sentence "2 is an even number". (The full meaning of this reading of the copula will become clearer as we proceed.)

Many B-theorists seem to take this reading of the tenseless copula for granted when it is conjoined with an expression denoting a temporal part (see e.g. Lewis, 1988, p.

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[8] According to the terminology made famous by Lewis (1986, p. 202), but invented by Johnston in his PhD thesis, *enduring* objects persist by being wholly present at distinct times, while *perduring* objects persist by having distinct temporal parts at distinct times.

[9] However, if "*F*" and "*G*" are *dispositional* predicates, as opposed to categorical ones, then it is highly questionable whether the predicates can be ascribed to temporal parts. See my (2009) for arguments for the claim that they cannot.

[10] Here we are only interested in the question whether the tenseless *copula* might be qualified by an extra time clause, since it is the meaning of the tenseless copula that is the subject matter of this paper. However, for the record I would like to point out that the addition of an extra time clause that functions as a sentence operator ("at *t**(*a*-at-*t is F*)") is redundant; incomprehensible if it modifies the subject expression ("*a*-at-*t*-at-*t** *is F*"); and against the doctrine of perdurance if it modifies the predicate ("*a*-at-*t is F*-at-*t**"). (One motivating factor behind the doctrine of perdurance is the *avoidance* of time-indexed properties, or properties as relations to times; see Lewis, 1986, p. 204.)

66). What I have just tried to do is make the rationale for this reading more explicit. I want to emphasize, though, that the *simpliciter* understanding of the copula must not be understood as entailing that *a-at-t* and *a-at-t´* are *atemporal* entities, existing in some abstract platonic realm outside space-time. If it came with this entailment, the sentences would express incoherent ideas, as "*a-at-t*" and "*a-at-t´*" are, supposedly, names of entities existing in time: viz. *temporal* parts. The *simpliciter* reading of the copula is merely to be understood as entailing that it is incongruent to qualify, or modify, the copula. (Thus, this reading is merely compatible with the subject being an atemporal entity; it does not entail that it is.)

However, if it is misguided to add a time clause to qualify the copula in (1^{ii}) and (2^{ii}), it might be objected to this parsing of (1) and (2), and to the reading of the copula it entails, that the tenseless *predication* is not temporal (even if the subject is). The predication, it might be insisted, certainly seems to be temporal.

In one sense, it is true that (1^{ii}) and (2^{ii}) render the tenseless predication in (1) and (2) "atemporal": the predication is not temporally qualified. But, on behalf of perdurantists, two observations can be made.

First, the fact that it is misguided to add a time clause to qualify the *linguistic* predication does not mean that the *metaphysical act of instantiation* is atemporal in the sense that it occurs in a platonic realm. Since the temporal parts and their properties exist in time, the act of instantiation is surely a temporal phenomenon taking place *in* time (see my 2007).

Secondly, one may argue that, even at the linguistic level, the predication is temporal, at least *derivatively*. One may understand (1^{ii}) and (2^{ii}) as entailing that *a*, as a four-dimensional *whole*, derivatively *is F* at *t* and *G* at *t´* – *in virtue of* having temporal parts at the times in question that *are F* and *G simpliciter* (cf. Lewis, 1988, p. 66) – where the time clauses are understood as qualifying the derived tenseless copula, and thus as temporally qualifying the derived tenseless predication.[11] So, arguably, at a derivative level, the linguistic predication is temporal.

It may still be complained, of course, that the predication in (1) and (2) appears to be "directly", not derivatively, temporal. To this the perdurantist can retort that things will only appear this way if the reader happens to parse (1) and (2) in a way perdurantists

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[11] The meaning of the tenseless copula when temporally qualified is discussed below in Section *VI*.

contend one should *not* (at least, if one wants the parsing to reflect the way the world fundamentally is).

V.

Let us turn to option (b). Here "at *t*" and "at *t´*" are taken to be associated with the predicate letter, so that (1) and (2) are parsed as:

(1^{iii}) *a is F*-at-*t*;

(2^{iii}) *a is G*-at-*t´*.

The interpretation of the copula is here somewhat less clear than it was in the previous case. This is because it is not altogether clear what "*F*-at-*t*" and "*G*-at-*t´*" are supposed to stand for. Presumably they are to be read as indicating that, contrary to common-sense ontology (and contrary to our supposition above), we are not really concerned with genuinely intrinsic properties such as straight and bent. We are concerned instead with "time-indexed" properties – or, more precisely, relational properties possessed by an object when it stands in a certain relation (the straight-at and the bent-at relation, respectively) to a certain time.[12]

The relations-to-times metaphysics is not wholly transparent, however. What exactly are straight-at and bent-at relations to times supposed to be? What is the nature of the persisting object bearing these relations (cf. Lewis 1986, 1988 and 2002)? Advocates of the view (who tend to be endurantists) will presumably take "*a*" to denote an *enduring* object wholly present *at* distinct times; but would a defender of (b) agree that the object is *F*-at-*t at times* in the course of its existence, where any added time clauses are associated with the copula rather than the subject expression or the time-indexed predicate (cf. note 10 above)?

If the answer is yes, the copula is most plausibly read in the way proposed for alternative (c), as discussed in Section *VI*. However, I doubt adherents of (b) would agree that the object is *F*-at-*t at times*. Notice, to begin with, that upholders of (b) will, in all

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[12] More fundamentally we can represent (1) and (2) as "*F*(*a, t*)" and "*G*(*a, t´*)", respectively. The best-known exponent of the view that what appear to be intrinsic properties are really relations to times is Mellor (1981, Ch. 7). For a recent, sympathetic treatment of the position, see Rychter (2008.)

likelihood, want to maintain that *a* is *F*-at-*t* at some *t** iff *a* is a relatum of the *F*-at relation to *t* at *t**. But they will probably not wish to say that *a* is a relatum of the *F*-at relation to *t* at any time.

Here is why. First of all, having adopted (b) one would probably not wish to say that *a* is a relatum of the *F*-at relation to *t at some times but not others*. To claim that *a* is a relatum of the *F*-at relation to *t* at certain times but not others is to treat the *F*-at relation to *t* as a *changeable* relation. However, relations to times are generally postulated to *account* for change. This means that if *a* were allowed to change relationally, then the utility of the relations-to-times metaphysics would become questionable. What would be achieved by replacing intrinsic change with relational change? Not much, it would seem.[13]

Secondly, defenders of (b) will probably shrink from claiming that *a* is a relatum of the *F*-at relation to *t always*, i.e. at all times in the course of the object's existence. For, once it is acknowledged that *a* is a relatum of the *F*-at relation to *t* at times, the apparent possibility that *a could* have failed to be a relatum of the *F*-at relation to *t* at some time looms large. The addition of the "always" clause suggests that the relation is nevertheless changeable and only contingently happens to relate *a* to *t* at all times in *a*'s existence. So, unless proponents of (b) can explain *why* the relation relates *a* to *t* at all times in *a*'s existence, insistence that it does is bound to look *ad hoc*.

Consequently, although adherents of (b) will in all likelihood regard the persisting object *a* as a temporal entity existing *in* time, they will probably not wish to say, of it, that it has its time-indexed properties *at* times. Presumably, they will say that the object *simply has* its time-indexed properties. True enough, that is how writers such as Mellor (1981, pp. 110-114) and Rychter (2008) actually formulate the matter. They do *not* add time clauses to sentences such as (1) and (2). But then, if, indeed, extra time clauses qualifying the tenseless copula should not be added, the copula is once again to be understood as an "is" *simpliciter*.

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[13] It is often argued that the problem of temporary *relations* is as pressing as the problem of temporary *intrinsics* (see e.g. Lewis, 1988, pp. 69-71; Rea, 2003, p. 256). How can one and the same thing bear and not bear a particular relation to a certain entity? From the perspective of an endurance theorist who thinks this is a genuine problem, replacement of intrinsic change with relational change merely moves one from the frying pan and into the fire. For my part, as I think that the problem of temporary intrinsic is based on a misconstrual of the endurance position (see Section *VII*) – and I would give the same diagnosis of the relational version of the "problem" – I do not think that such a move, with its anomalous view of *prima facie* intrinsic properties, would result in a stronger position.

Again it may be complained that, given this reading of (1) and (2), the tenseless predications turn out to be atemporal. It is true, it might be objected, that the predications *involve* times in this sense: they say that the subject bears a certain relation to a certain time. However, this does not render the predications temporal, since *they* are not temporally qualified (i.e. the copulas of the predications are not temporally qualified) but hold *simpliciter*.

Advocates of the relations-to-times metaphysics may want to retort – following the perdurantist line of response – that the impression that the predications occurring in (1) and (2) are temporal is due to the fact that the reader is parsing them inaccurately, i.e. in a way out of accord with how the world actually is. However, in the case of (b), the weakness of this response lies in the opacity of the metaphysics presumed. The perdurance metaphysics is fairly straightforward (though certainly contrary to common sense): we can fathom what the world would be like, to an extent, were the perdurance metaphysics true. But things are different with the relations-to-times metaphysics, as I will explain in the remainder of this section.

To begin with, Mellor himself (1998, pp. 93-94) complains that the relations-to-times metaphysics is logically compatible with objects bearing relations to times at which they are not themselves located. That is, the metaphysics does not rule out the possibility that an object x bears, say, the bent-at relation to a certain time t although x is not located at t. (It was for this reason that Mellor abandoned the view: see his 1998.) Moreover, even if we ignore the peculiarity of this aspect of the theory, it is unclear how we are to envisage the more modest cases in which an object bears relations to times at which it is located.

Here is how David Lewis tries to picture such a situation:

Imagine trying to draw a picture of two different times, t_1 when I sit and t_2 when I stand. You draw two circles, overlapping because I exist at both times so you want to draw me in the intersection. But then you have to draw me bent and also straight, which you can't do […] What to do? [The relations-to-times view] says to draw the circles overlapping, draw me in the intersection as a mere dot or shapeless blob, draw a line labelled 'bent-at' from me to the

t_1 circle, and a line labelled 'straight-at' from me to the t_2 circle. A queer way

to draw a shape! (Lewis, 1988, pp. 66-67)

This vivid depiction of relations-to-times metaphysics makes sense of the *simpliciter* reading of the copula, but I doubt it is the image defenders of the relations-to-times metaphysics have in mind. They hold that persisting objects are *multiply located* in time, wholly present at distinct times. Hence, in order to get a more realistic representation, they should want to depict the object *several* times – not just once in a once-and-for-all picture.[14]

An ordinary space-time diagram ought to be useful for such a purpose. However, how do you depict an enduring object which has no intrinsic properties and which only bears relations to distinct times on a space-time diagram? By drawing several dots, or blobs, representing one and the same object, multiply located in time, with differently labelled lines going from it to distinct times? That is still a queer way of drawing an object.

Moreover, from which dots, or blobs, on the diagram are the lines to be drawn? Only from the dot(s) representing the object as being located at the time(s) *to* which the object bears the relation in question? Or from further dots, representing the object at earlier or later times, although these dots do not represent the object as being located at the time(s) to which the object bears the relevant relation? Or from *all* the dots representing the object multiply located in time, no matter where on the diagram they are to be found?

The difficulty here is that, whatever alternative is chosen, drawing lines *from* dots located at certain times *to* times forces one to add time clauses that qualify the copula appearing in linguistic descriptions of the situation. For the multiply located object is then envisaged as bearing such relations to times *at* certain times (either at one time or several times). Hence we get a linguistic description that *differs* from the way proponents of relations-to-times metaphysics actually express themselves. Moreover, defenders of that

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[14] However, Rychter says that we should think of an enduring object, such as a banana, *timelessly*: that is, we should adopt "an atemporal perspective [which] will show the banana *somehow* outside time, and bearing different relations to different times" (2008, p 165, italics original). But granted that the banana exists *in* time (it is, after all, an enduring entity), I want to know how we are to think of the banana in a more realistic way given the relations-to-times metaphysics.

metaphysics will then have to respond to the difficulties, pointed out above, with the addition of extra time clauses that qualify the copula.

In short, then, if adherents of the relations-to-times metaphysics refuse to add such extra time clauses, and accordingly adopt the *simpliciter* reading of the copula, they will have to reject this way of envisaging the metaphysics. The positive issue as to how we *are* to envisage the relations-to-times metaphysics in a comprehensible and realistic manner now looks pressing.

VI.

I turn, finally, to alternative (c). Here we regard "at t" and "at t'" as being associated with the copula rather than the subject expression or the predicate letter, and we therefore take (1) and (2) to involve "direct" and genuine temporal predication. We parse (1) and (2) as:

(1^{iv}) *a is*-at-*t F*;

(2^{iv}) *a is*-at-*t' G*.

This parsing is quite natural – in fact, presumably, mandatory – if we believe that objects persist through time by enduring and if we find time-indexed properties too peculiar to be acceptable and accordingly want our predicates to stand for genuinely intrinsic properties.[15]

The endurantist Jonathan Lowe, who proposes this parsing in his (1988),[16] maintains that on this reading the persisting object's metaphysical *having* (exemplification) of the intrinsic properties *F* and *G* is temporally *relativized*, as the copula of the predication is temporally qualified (Lowe, 1988, pp. 73-74). Granting that this is the intended metaphysical implication of (1^{iv}) and (2^{iv}), we still need to address the *linguistic* question: how is the "*is*"-part in "*is*-at-*t*" in (1^{iv}) and (2^{iv}) to be interpreted?

If the copula is still regarded as tenseless, how are we to understand it when "at t" qualifies it? What does the tenselessness of the copula amount to in this case?

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[15] It is to be noticed, however, that perdurantists ought to adopt such a parsing for sentences of the following type: "*a*, as a whole, *is* (derivatively) *F* at *t*" (see above, Section *IV*). Moreover, friends of time-indexed properties who accept the kind of space-time diagram discussed above (Section *V*), and who will consequently want to add extra time clauses to "*a is F*-at-*t*" and "*a is G*-at-*t'*", should adopt this kind of parsing for the extra time clauses.

[16] See also Johnston (1987) and Haslanger (1989).

Observe that the copula can hardly be held to be a copula *simpliciter* any longer. To say that an entity *x* is *F simpliciter* is to deny that the copula of the predication (and thereby the predication) is qualified or modified. But here it is held that "at *t*" is doing precisely that: qualifying the copula (i.e. the predication).[17] Thus on a *simpliciter* reading of the copula the sentences become incongruous if the time clauses are thought of as qualifying the copula. But if the tenseless copula is not a copula *simpliciter*, what else could it be?

I now want to sketch an alternative interpretation of the tenseless copula within the framework of (c). I suggest that the tenseless copula is best taken to possess a *disjunctive* character within this framework. More precisely, I propose that the tenseless copula is to be interpreted as saying basically the same as the following disjunction of *tensed* copulas: "was, is or will be".[18]

On this proposal, we take the copula to entail that the instantiation of the property occurs *in* time. This is in contrast with the *simpliciter* reading of the copula, which is compatible with the instantiation being an atemporal phenomenon "obtaining" in a platonic realm. However, the disjunctive copula leaves it unsettled *at* what time, or times, of the object's existence the instantiation of the property occurs (did occur, occurs or will occur): it does not tell us where, in time, the having of the property is located. The copula is thus to be understood as saying that the subject exemplifies the property expressed by the predicate letter *at some point in time or another during its existence*. The "at *t*" clause then supplies the necessary information about when, exactly, the instantiation occurs (did occur, occurs, or will occur). The time clause thereby complements the copula; and by complementing the copula, it indirectly and retrospectively 'qualifies' the copula.

The copula comes to be qualified in the sense that one of its disjuncts is picked out as being the correct one. This qualification is an indirect affair, however, in that the qualification is due, not solely to the time clause, but the time clause together with a time of reference to which the disjunction is relativized or indexed: time of utterance is the

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[17] This understanding of the role of the time clause is sometimes called "adverbialism".

[18] A-theorists often treat the tenseless copula in sentences such as (1) and (2) as a disjunction of tensed copulas. What I propose here is that *B-theorists* who accept alternative (c) should *also* do so, as otherwise they will end up endorsing incongruous statements. Notice, however, that this does not mean that such B-theorists must altogether give up the tenseless copula of the *simpliciter* variety (in non-mathematical contexts). For example, being traditional B-theorists, they may wish to say that "time *t* is before time *t´ simpliciter*". (Compare the resulting position with that of Smart (1963, pp. 138-139), who insists that the tenseless copula found in mathematics suffices for B-theorists.)

natural anchor, but any arbitrarily selected B-time will do. For example, if the time of the time clause is later than the reference time, the "will be" disjunct will be picked out as the correct one.

A minor point: although (1) and (2) can be parsed as (1^{iv}) and (2^{iv}) to indicate that the time clause is associated with the copula rather than the subject or the predicate letter, the "is-at-t" and "is-at-tʹ" symbolism in (1^{iv}) and (2^{iv}) look a little awkward. They seem to suggest that the time clauses are to be understood as literally *attaching* to the copula, creating complex copula expressions. I think that the right way to understand the role of the time clauses under (c) is to see them as complementing, and indirectly and retrospectively qualifying, the copula. I would therefore like to complement (1^{iv}) and (2^{iv}) with (1^{v}) and (2^{v}). In (1^{v}) and (2^{v}) the time clauses are once again 'detached' from the copula. However, they should still be associated with the copula – which they complement, and indirectly and retrospectively qualify – rather than subject or the predicate expression. (1^{v}) and (2^{v}) also make disjunctive reading of the tenseless copula explicit:

(1^{v}) *a* was, is or will be *F* at *t*;

(2^{v}) *a* was, is or will be *G* at *t*ʹ.

A couple of questions about this reading of (1) and (2) arise. I now want to address these. The first question is: does the disjunction-of-tensed-copulas reading require us to adopt an A-theory of time – a theory in which the "present" moment is metaphysically privileged? The answer is: no. As was hinted above, the disjunction of tensed copulas can perfectly well be treated as relativized, or indexed, to a B-time that lacks any property of being objectively past, present or future, so the disjunction need not imply that relative to *the objective present*, *a* was, is, or will be *F* at *t* (i.e. that *t* is either objectively past, present or future). Thus, although at this point we are reading the copula in (1) and (2) as a disjunction of tensed copulas, we can still hold, if we wish, that all times are ontologically on a par, and that there are no objective A-properties but only B-relations.

Secondly, does the disjunction-of-tensed-copulas reading entail that the copula is no longer tenseless but tensed? Again I think the answer is negative. To begin with, the

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idea is not that the expression "*is*" is to be eliminated in favour of a disjunction of tensed copulas. It is rather that the copula is to be understood as having essentially the same meaning as a disjunction of tensed copulas. Thus (1^v) and (2^v) do not *replace* (1) and (2); they merely make explicit what (1) and (2) can be taken to say if we associate the time clauses with the copula rather than the subject expression or the predicate letter. The original sentences are not being discarded. The original, italicized "*is*" in (1) and (2) is still there.

Furthermore, as said above, the time to which the copula is indexed can be selected arbitrarily: any B-time will serve. The copula is, therefore, in an important sense *temporally impartial*. The expression does not place constraints on which times are admissible as reference times, as paradigmatically tensed copulas do (within the context of a full sentence). This means that (1) and (2) remain either true or false no matter when they are uttered – or, more generally, no matter what their reference time is. Their truth value does not change over time in the way that the truth value of paradigmatic tensed sentences does.[19]

Moreover, the qualification of the copula is, as I have said, only a retrospective and indirect affair. In the first instance the copula expresses a disjunction of tensed copulas; in the next instance (logically speaking) the time clause 'picks out' the correct disjunct expressed by the copula. But it is only because a reference time is (or comes to be) specified that a correct disjunct is picked out. Moreover, the reference time is not expressed by the sentence itself. It is determined by the context of the utterance (if we agree to let the reference time be the time of the utterance) or by arbitrary stipulation.

Thus, we do not have to regard the ostensibly tenseless term "*is*" as a tensed item, because we interpret it as expressing a disjunction of tensed copulas.

To sum up, my interpretation of (c), in a nutshell, is as follows. Together with a given reference time, the time clause, which is associated with the copula rather than the subject or the predicate, *specifies* the *loose*, tenseless predication (as expressed by the copula, i.e. a disjunction of tensed copulas), so that the predication is pinned to the

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[19] I here think of paradigmatically tensed sentences such as "It will rain tomorrow". However, as we saw above (Section *II*, note 7), it is possible to construct *eternal tensed* sentences. The isolated fact that a certain sentence does not change in truth value over time does not, therefore, strictly *prove* that the sentence is tenseless. However, it is a strong *indication* that it is. Moreover, it should be borne in mind that in this section we are not regarding the time clauses as sentence operators – the eternal tensed sentences in note 7 have the form "at t (a is F)".

particular time of the time clause. The object's metaphysical *having* of the property is thereby specified as being 'located' or 'occurring' *at* the specific time of the time clause. If that having is not located at the time of the time clause, no utterance of the sentence is true, no matter what the reference time is. If it is located at the time of the time clause, every utterance of the sentence is true, no matter what the reference time is.

Before proceeding, I need to address one further issue.[20] Why do I say that the tenseless copula expresses a disjunction of tensed copulas rather than the comparable *conjunction* (i.e. was, and is, and will be)? Are not the two alternatives logically equivalent?

The answer is that the alternatives are not logically equivalent. To begin with, surely there is a vast difference in the *meanings* of a copula expressing a disjunction of tensed copulas (in shorthand "is_{dis}") and a copula expressing a conjunction of tensed copulas ("is_{con}"): one expresses disjunction and the other conjunction. Moreover, this difference in meaning has the consequence that the *truth values* of utterances of sentences – which are identical sentences except in the respect that one contains is_{dis} and the other is_{con} – may differ. For example, if a certain object *o* (at the 'present' time) will be *F* at a certain 'future' B-time *t*, it will be true to say, now, that o is_{dis} *F* at *t*. After all, if the time of the utterance is the reference time, the last *disjunct* expressed by "is_{dis}" will accurately record the situation even though the first two disjuncts do not; and this is enough. However, it will not be true to say that o is_{con} *F* at *t*, because only one (the last) of the three *conjuncts* records the situation accurately, and in a conjunction that is not enough.[21] Hence, the two readings of the tenseless copula under (c) are not logically equivalent. B-theorists endorsing (c) will ideally want to say true things, so they should opt for the *disjunctive* reading rather than the conjunctive one. (Another advantage of the disjunctive reading will be disclosed below in Section *VII*.)

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[20] One raised by an anonymous reviewer of the paper.

[21] I am not altogether sure whether the inaccurate recording here entails (i) that the utterance of the sentence is false, or (ii) that the utterance fails to say anything to which a truth value can be assigned because the used sentence is ungrammatical. The important point is that the second utterance is not true. (Things get worse if we read the tenseless copula as saying "always was, is and always will be". Consider the last conjunct. What could it mean to say "*o* will always be *F* at *t*"? Here "always" is not understood as a sentence operator (cf. Section *II*) but as a part of the by "at *t*" qualified copula.)

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VII.

I have now achieved the main aim of the paper, which was to show that the tenseless copula in sentences such as (1) and (2) is to be read in different ways depending on how we interpret the role of the time clauses "at *t*" and "at *t′*". I wish to end the paper with a short discussion of cases in which the time clauses are missing or deleted from sentences such as (1) and (2), but where the sentences still figure within a context making it clear: that "*a*" is supposed to denote a persisting object; that "*F*" and "*G*" stand for different determinate, *prima facie* intrinsic properties falling under the same determinable; and that the copula is tenseless.

Accordingly, consider:

(3) *a is F*;

(4) *a is G.*

Do (3) and (4) have to be treated as mutually exclusive, i.e. incompatible? Or, bearing in mind the viewpoints associated with (a-c) above, can they be read as being compatible?

Clearly, they need not be regarded as incompatible. A supporter of (a), given the principle of charity, could say that the combination of (3) and (4) is best construed as shorthand for:

(3^i) some temporal part of *a* is *F simpliciter*;

(4^i) some *other* temporal part of *a* is *G simpliciter*.

Upholders of (b) can read these as:

(3^{ii}) *a* is *F-at-some-t simpliciter*;

(4^{ii}) *a* is *G-at-some-t′ (such that $t \neq t′$) simpliciter.*[22]

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[22] The "$t \neq t′$" clause is, of course, arbitrarily added to (4^{ii}); it could just as well be added to (3^{ii}). The point is that when (3) and (4) are uttered in conjunction, given the principle of charity, such a clause should be understood as being implied by the utterance.

Advocates of (c) can read them as:

(3^{iii}) *a* was, is or will be *F* at some *t*; [23]

(4^{iii}) *a* was, is or will be *G* at some *t´* such that $t \neq t´$.

On none of these alternative readings of (3) and (4) do they have to be regarded as mutually exclusive. We ought to grant, however, that if one were to encounter (3) and (4), not knowing the exact context of them (other than the fact that "*F*" and "*G*" stand for different determinate intrinsic properties falling under the same determinable), and being unsure whether or not the italicized "*is*" stands for a tenseless copula, one might well take them to say:[24]

(3^{iv}) *a* is (present tense) *F*;

(4^{iv}) *a* is (present tense) *G*.

Or, perhaps:

(3^{v}) *a is F simpliciter*;

(4^{v}) *a is G simpliciter*.

On both of these understandings (3) and (4) would be incompatible. But as I have just shown they do not have to be thus understood. (I grant, though, that on the readings that render them compatible, distinct time clauses are thought of as being there implicitly). More importantly, *if an advocate of the idea that objects endure through intrinsic change*

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[23] Notice that, on this interpretation, no matter where in time *a*'s *having* of *F* is located (as long as it *is* located somewhen in time), any utterance of "*a is F*" is true.

[24] To make the example more straightforward, we can imagine a person who encounters the two sentences "*a* is bent" and "*a* is straight", i.e. sentences with ordinary English predicates substituted for "*F*" and "*G*" and a copula which is not italicized (B-theorists do not always symbolize tenselessness by the use of italics).

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were to utter the sloppy sentences (3) and (4), s/he should be taken to be saying not what the latter two combinations say, but only what the (3^{iii})-(4^{iii}) combination says.[25] However, in discussions of the problem of temporary intrinsics in the philosophical literature a tendency to neglect the combination of (3^{iii}) and (4^{iii}) is pervasive; and because of this the position that objects endure through intrinsic change is often thought, unfairly, to be inconsistent.[26]

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[25] Nor should s/he be taken to be adopting the conjunctive reading of the copula proposed by the anonymous reviewer (discussed above, Section *VI*).

[26] See e.g. Lewis (1999, p. 3) and Merricks (1995, pp. 526–527). For extensive discussion of the traditional arguments against the view that enduring objects survive intrinsic change in B-time, where this lapse is absent, see my (2007).

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