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Tensed Relations

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One charge against presentism—the view that only present things exist—is that it cannot account for the apparent truth of claims like 'Lewis admired Ramsey', 'Clinton belongs to the same political party as JFK', and 'the short circuit caused the fire'.[1] If presentism is true, these sentences would seem to ascribe relations one or both of whose relata do not exist. But this violates the Principle of Relations:

Principle of Relations: If *x, y, z, …* stand in relation *R*, then *x, y, z …* exist.

Non-serious presentism entails a rejection of the Principle of Relations. But few have found non-serious presentism convincing,[2] mainly because it seems to commit us to Meinongion entities.

Unconvinced by non-serious presentism, most defenders accept the Principle of Relations. This apparently forces them to deny that there are cross-time relations, and hence to deny apparently true claims like 'Clinton belongs to the same political party as JFK'.

There have been several replies. Roderick Chisholm (1990), for example, recommends re-interpreting the problematic claims in a way that is acceptable to the presentist; Ted Sider (1999) and Ned Markosian (2004) suggest that the presentist should deny that there are cross-time relations but accommodate the appeal of the problematic claims; and Tom Crisp (2005) argues

[1] See e.g. Adams (1986), Bigelow (1996), Markosian (2004), Rea (2003), and Sider (1999). The presentist is also faced with the problem of accounting for names that appear to name non-present objects. I shall here assume that the presentist has a way of responding to this objection. For one possible response, see Crisp (2003).

[2] An exception is Hinchcliff (1988).

that the presentist should deny that there is any obvious evidence for the truth of claims that ascribe cross-time relations.

I want to explore a fourth possibility, which is to maintain that there are genuinely tensed relations but no tenseless cross-time relations.

1. Tensed Relational Claims

Presentists and eternalists agree about the truth-value of a range of tensed claims. For example, they agree to the truth of:

(1) There existed dinosaurs

But they disagree about what claims like (1) mean. Eternalists think that past- and future-tensed claims are made true by claims that quantify over past and future times and entities. For example, (1) is to be analyzed as 'there are dinosaurs, located temporally before us'.[3]

The standard strategy for the presentist is to introduce primitive intensional tense operators such as *it was the case that*, *it was the case 12 years ago that*, and *it will be the case that*. With primitive tense operators, (1) cashes out to:

(2) It was the case that (there are dinosaurs)

Within the scope of a past tense operator, the quantified claim 'there are dinosaurs' is not existentially committing.

However, the tense operator strategy cannot help us with relational claims. Take:

(3) Lewis admired Ramsey

[3] See e.g. Sider (forthcoming), p. 4.

It won't help to analyze this claim as:

(4) It was the case that (Lewis admires Ramsey)

Since there never was a past time at which Lewis and Ramsey both existed, Lewis never stood in the relation of admiration to Ramsey. Hence, if (3) is a genuinely relational claim, (3) is false.

One might suspect that the trouble with claims like (3) is that they purport to ascribe tenseless relations. But there is similar trouble with tensed relational claims. As examples of tensed relational claims, consider:

(5) My daughter was taller at age two than my son was at age two

(6) The secretary who begins next Thursday will be more efficient than is the temp worker who is currently employed with us

(7) I am two years older than you were when you got promoted

The surface form of these claims indicates that the relations ascribed (if any) are not binary. The eternalist would presumably treat these claims as ascribing quaternary relations among individuals and times. (5), for example, might be thought to ascribe a relation that holds among my daughter, my son, a time at which my daughter was two, and a time at which my son was two.

Quaternary relations cannot be analyzed in terms of binary relations. Consider, for instance, the following paraphrase of (5):

There is a time t_1 such that my daughter is two at t_1 and there is a time t_2 such that my son is two at t_2, and my daughter stands in the *taller than* relation to my son.

Unlike (5), this paraphrase could be true in virtue of the fact that my daughter is now taller than my son. The following won't do either:

> There is a time t_1 such that my daughter is two at t_1 and there is a time t_2 such that my son is two at t_2, and my daughter, as she exists at t_1, stands in the *taller than* relation to my son, as he exists at t_2.

This is a suitable paraphrase. However, it does not succeed in reducing the quaternary relation ascribed in (5) to binary ones. For 'my daughter, as she exists at t_1, stands in the *taller than* relation to my son, as he exists at t_2' ascribes a quaternary relation. The posited quaternary relations are irreducible. For the eternalist, no problem lies therein.

But how is the presentist to treat these claims? Though my son and my daughter both exist, the times featuring in the eternalist analysis are unreal. One option is to deny that the claims are true. But it seems considerably worse to deny that my daughter was once taller than my son was than to deny that Clinton belongs to the same party as JFK. After all, the former, but not the latter, are tensed claims about individuals that do exist.

I think the most promising response is to treat the problematic claims as ascribing irreducibly tensed binary relations. Where 'Socrates was wise' is the presentist's way of saying that there is a time at which Socrates is wise, 'my daughter was taller at age two than my son was at age two' is the presentist's way of saying that my daughter, as she exists at a time at which she is two, stands in the *taller than* relation to my son, as he exists at a time at which he is two.

Tenseless quaternary relations among individuals and times are not reducible to binary relations and quantification over times. Likewise, tensed binary relations are not reducible to tenseless binary relations and tensed existence claims. (5), for example, is not reducible to 'it was the case that my daughter is two, and it was the case that my son is two, and my daughter stands in the relation of being taller than to my son'.

Let us represent tensed relations with lambda operators. Where the property of having been nice can be represented as λx(*x* has been nice), the tensed binary relation ascribed by 'my daughter is now taller than my son was' can be represented as $\lambda x \lambda y$(*x* is now taller than *y* was). The former reads: the property of being an *x* such that *x* has been nice; the latter reads: the relation between *x* and *y* such that *x* is now taller than *y* was.

Tensed binary relations such as $\lambda x \lambda y$(*x* is now taller than *y* was) can obtain between individuals that never existed at the same time. So, if there are tensed binary relations, then the Principle of Relations is false. To prevent tenseless relations from obtaining among individuals that do not co-exist, the presentist should assent to a revised Principle of Relations:

*Principle of Relations**: If *x*, *y*, *z*, … stand in the tenseless relation *R*, then *x*, *y*, *z* … exist.

Given the revised Principle of Relations, the relation $\lambda x \lambda y$(*x* is taller than *y*) cannot hold between two individuals unless they both exist, but the relation $\lambda x \lambda y$(*x* is now taller than *y* was) can.

2. Tensed Properties

How expensive are the tensed relations we are positing? At first glance: not very expensive.

Presentists believe there are tensed truths, for instance 'dinosaurs once roamed the earth'. But it is widely agreed that truth supervenes on being: if it had been false that dinosaurs once roamed the earth, then there would have been a difference in what exists.[4] The presentist cannot say that the difference is that there wouldn't have been any dinosaurs. There are no dinosaurs either way.

To account for the truth of past- and future-tensed claims presentists often posit tensed properties (Bigelow 1996, Crisp forthcoming). The property of being a place where dinosaurs

[4] For discussion, see Keller (2004: 85).

roamed grounds the truth of ‘dinosaurs once roamed the earth’: if it had been false that dinosaurs once roamed the earth, then the earth would not have had the property of being a place where dinosaurs roamed.

But if the presentist is prepared to posit tensed truth-grounding properties, it would seem that she has no reason to dispose of the property of being an *x* such that *x* was taller at age two than my son was at age two.

No doubt that a critic will rejoin that there is a difference between the property of being a place where dinosaurs roamed and the property of being an *x* such that *x* was taller at age two than my son was at age two. Tom Crisp (forthcoming) argues that past tensed properties like that of being an x such that dinosaurs roamed x is reducible in terms of the property of being included in earlier times. Crisp construes earlier times as maximally consistent sets of propositions. The abstract times—viz. the maximally consistent sets of propositions—form what he calls an ‘ersatz B-series’. They are ordered in terms of the relations *is earlier than*, *is simultaneous with*, and *is later than*. One of these sets is the present time, namely, the set of propositions that is presently true. Given the ersatz B-series, ‘the property of being an *x* such that dinosaurs roamed *x*’ can be analyzed as ‘being an *x* such that the proposition that dinosaurs roam *x* is included in an earlier time’.

One might naturally wonder what determines which abstract times are admissible members of the B-series. According to Crisp, the admissible times are those whose members are true, were true, or will be true. The latter claim, of course, cannot be further reduced on pain of circularity. But Crisp’s project is to provide a reduction of one kind of tensed property, not to provide a reduction of the standard tense operators.

Unfortunately for the presentist, Crisp’s method cannot be extrapolated to account for properties like that of being an *x* such that *x* was taller at age two than my son was at age two. Earlier times are sets of propositions that *were* true. For some *x*, there may be an earlier time at which *x* is two, and my son is two, and *x* is taller than my son. But, intuitively, someone can be

an *x* such that *x* was taller at age two than my son was at age two, even if there is no such time. Crisp's ersatz B-series won't help the presentist here.

Since the property of being an *x* such that *x* was taller at age two than my son was at age two and its ilk cannot be reduced to sets of propositions and categorical properties, it might seem that the presentist would do best to forsake them and the corresponding relations.

3. Modal Relations

There is, however, good reason not to reject the possibility of irreducibly tensed properties and relations too swiftly. Most of those prepared to regard irreducibly tensed properties and relations as obscure profess to be actualists. But actualists are themselves committed to irreducibly modal properties and relations. Consider:

(8) I could have built a house that is prettier than the one I actually built.

The modal realist has no trouble with (8). She can simply say that (8) ascribes a quaternary relation that holds among individuals and worlds. Where @ is an individual constant referring to the actual world, *x* and *y* range over individuals, and *w* ranges over worlds, she might translate (8) as follows:

> (A) There is an *x* and a *y* such that *x* is part of @, and *x* is the house I actually built, and *y* is part of some non-actual world *w*, and *y* is a house that I (or my counterpart) built, and *y* is prettier than *x*.

Since actualists deny the existence of non-actual individuals, they cannot provide this sort of analysis. Actualists typically propose to reduce talk of possible entities to talk of actual entities. Linguistic ersatzists, for example, represent worlds as maximally consistent sets of sentences.

'There is a world where there are blue swans' is to be analyzed as 'there is a world surrogate according to which there are blue swans'. Possible individuals can be treated as maximally consistent sets of open sentences. For example, blue swans can be treated as sets containing open sentences such as '*x* is a swan' and '*x* is blue'. However, no set of sentences will contain (A). Moreover, the *prettier than* relation does not hold between sets of sentences. So, it seems that the linguistic ersatzist will need to posit irreducible modal relations in order to account for the truth of (8).[5]

Ted Sider (2002) offers a radically different actualist proposal: a single pluriverse surrogate represents the totality of worlds and individuals all at once. Possible world talk is true just in case it is entailed by a pluriverse sentence, where a pluriverse sentence is a maximal description of a realistic Kripke model (i.e., a model that is faithful to primitive modal facts).[6] Sider admits that the pluriverse sentence may represent relations between individuals in different worlds. So, it seems that Sider's proposal provides the actualist with a way of accounting for the truth of (8).

But Sider's approach is not entirely free of difficulty. Each pluriverse sentence is supposed to be a maximal description of a realistic Kripke model. But it is not obvious that there is a realistic Kripke model representing (8). For a Kripke model to be realistic, it must be faithful to primitive modal facts.

But what is a primitive modal fact? Treating it as a fact expressible in the language of first-order quantified modal logic gives trouble. For (8) is not expressible in that language. We might enrich our modal language with the addition of an actuality operator. In the language of possible worlds, the actuality operator can be characterized as follows:[7]

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[5] There is a simple solution to these problems. One could simply deny that (8) is true on its intended reading. (8) fails to be true if there could not be something that does not actually exist. See e.g. Michael Fara and Timothy Williamson (2005). I shall set aside this response.

[6] Since what counts as a realistic model depends on primitive modal facts, Sider's account does not succeed in reducing the primitive modalities, but only in reducing talk of possible objects.

[7] Fara and Williamson (2005).

Aφ is true at a world *w* iff φ is true at the actual world

However, (8) is not expressible in the enriched language either. The best we can do is:

(9) $\Diamond\exists x\exists y(\mathrm{F}x \,\&\, \mathrm{AG}y \,\&\, \mathrm{P}xy)$,

where F means *is a house I built,* G means *is the house I built,* and P means *is prettier than*.[8] In the language of possible worlds, (9) is true iff there is a world *w* such that there is an *x* at *w*, and there is a *y* at *w*, and *x* is a house I built, and *y* is the house I actually built, and *x* is prettier than *y*. But this is not the intended reading of (8). On the intended reading, it could have been both that I built a house that is prettier than the one I actually built, *and* that the house I actually built was never built. Since (8) is not expressible in the enriched language, we cannot identify the primitive modal facts with facts expressible therein.

Our only hope is to treat (8) as ascribing a primitive modal relation. But then in spite of its other virtues, Sider's proposal does not, after all, help to avoid commitment to irreducibly modal properties and relations.

This is good news for the presentist. For if her actualist opponent has no quarrel with irreducibly modal properties and relations, her opponent should have no real quarrel with irreducibly tensed properties and relations either.

4. Tenseless Relations

We have yet to say something about the claims mentioned at the outset of the paper, for instance:

[8] For simplicity's sake, I treat the descriptions as predicates. Nothing crucial hangs on this.

(10) Clinton belongs to the same political party as JFK

(11) Lewis admired Ramsey

(12) The short circuit caused the fire

The surface structure of (10) indicates that it does not ascribe a tensed relation, but a tenseless one. According to the revised Principle of Relations, tenseless relations cannot obtain among entities that do not exist. Since JFK does not exist if presentism is true, no tenseless relation can obtain between him and Clinton. For that reason I am inclined to think that (10) is untrue. I am, however, sympathetic to the idea that (10) could be a reduced expression of a more complex logical form. For instance, it may be that it is used as a reduced expression of the proposition that Clinton *now* belongs to the same political party as JFK *did*.

(11), too, seems to ascribe a tenseless relation. So, if the revised Principle of Relations and presentism are both right, then (11) would seem to fail to be true. Here again there is the possibility of denying that the surface form is a good indicator of the underlying logical form. It may be that (11) does not in fact ascribe objectual admiration but admiration-*wh*, as in 'Lewis admired *what* Ramsey did'. Unlike (11), the latter claim seems to ascribe a tensed relation. So, if the latter accurately represents the underlying logical form of (11), then presentism and (11) could both be true.

A similar strategy is unavailable in the case of causal claims like that in (12). However, if causal claims can be given a counterfactual analysis, they do not constitute an insuperable difficulty for the presentist. To illustrate, consider the simple counterfactual analysis: *x* caused *y* iff if *x* had not occurred, *y* would not have occurred. The presentist can accept this sort of analysis. Where $\Box\!\!\rightarrow$ is the subjunctive conditional, the presentist might re-write the analysans as follows: (it was the case that *x* does not occur) $\Box\!\!\rightarrow$ (it was the case that *y* does not occur).[9]

[9] For a related suggestion, see Crisp (2005: 14). For the overlapper strategy, see Zimmerman (1997).

In conclusion, I have argued that the presentist can respond to the problem of cross-time relations if she is prepared to posit irreducibly tensed relations. Irreducibly tensed relations are no less objectionable than the irreducibly modal relations to which her actualist opponent is already committed.[10]

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