

# Serious Copula-Tensing\*

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**ABSTRACT.** M. Johnston proposed an adverbialist solution to the problem of intrinsic change for enduring things. D. Lewis interpreted it as a way of tensing the copula. In his view, it has the defect of replacing the having *simpliciter* of a property by the standing in a triadic relation to a property and a time, and so is threatened by Bradley's Regress. I agree with Lewis on requiring the having a property to be non-relational, while I disagree with him on restricting it to the having *simpliciter*. I tense the copula non-relationally and yet more seriously than Johnston, by characterizing tense as a copulative *de re* modality concerning endurance, which I relate to R. Taylor's 'pure becoming'. I will show that my way gives a better solution to the problem of intrinsic change than those by other endurantists, because of its close connection to an account of tense, endurance and becoming.

## 1 Johnston's Solution to the Problem of Intrinsic Change

Johnston solves (or dissolves) the problem of intrinsic change for enduring things by applying what he calls 'eponymous solution to the problem of modal variation'<sup>1</sup>. He rephrases the statement 'Sam is fat in the world  $v$  but he is thin in the world  $v^*$ .' to 'Sam is *v*ly fat but he is *v*\*ly thin.', reviving the eponymous meaning of modality as 'the ways or modes in which things are related to properties', which are often expressed by adverbs. Analogously, in his view, the statement 'Sam is fat at the time  $t$  but he is thin at the time  $t^*$ .' should be rephrased to 'Sam is *t*ly fat but he is *t*\*ly thin.', because temporal qualifiers in reports of change are typically adverbs which modify the copula of predication.

According to Johnston, the problem of intrinsic change looked like a problem only because we forgot about the possibility of relativizing the instantiation relation to a time. If only we relativize it, we need neither of employing temporal parts, treating a property as a relation to time, nor understanding temporal qualifiers as sentence-formers on sentences. Consequently he stands against both perdurantists and presentists.

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<sup>1</sup> [Johnston 1987]

D. Lewis, who is a perdurantist, characterized Johnston's solution as a way of tensing the copula<sup>2</sup>. Though he is allied with Johnston in opposing to the presentist solution because he thinks that it rejects persistence altogether, he also criticizes Johnston's solution for the reason that it replaces the having *simpliciter* of a property by the standing in a triadic relation to a property and a time, and so is threatened by Bradley's Regress. On the other hand, the presentists like T. Merricks and M. Hincliff accused both Lewis and Johnston of sharing the view of eternalism, while they are allied with Lewis in respecting the having *simpliciter* of a property<sup>3</sup>

Basically I support Johnston's way of holding endurantism by tensing the copula. However, I agree with Lewis on requiring the copula of predication to be non-relational. At the same time I have more sympathy with presentists than Johnston and Lewis in taking tense seriously, while I am inclined to reject the presentism (at least its strong version) itself for the same reason as Lewis. In the following, firstly I enumerate a few adequacy conditions for a serious tensing. Next I try to satisfy these conditions, by characterizing tense as a copulative *de re* modality concerning endurance and by understanding endurance with R. Taylor's concept of pure becoming<sup>4</sup>. Lastly I show that it solves the problem of intrinsic change in a better way than other endurantists' ways.

## 2 Tense as a Copulative *de re* Modality of Endurance

I would like to set three adequacy conditions for a desirable serious tensing:

- (1) ontological irreducibility of tense
- (2) some ontological privilege of the present
- (3) metaphysically fundamental asymmetry between the past and the future

I side with presentists by holding (1) and (2). As for (2), however, I do not necessarily insist on either the exclusive existence nor the absoluteness of the present. I would be satisfied if there remained some ontological superiority to the past and the future. On the other hand, I am more ambitious than presentists in holding (3). Though 'metaphysically fundamental' is ambiguous, I at least require it to be non-empirical, and so the contingent asymmetry brought about by *e.g.* the causal indetermination of the future or the future increment of entropy would not be enough.

Johnston's copula-tensing, as characterized by Lewis, does not satisfy any of these conditions and so it is a kind of 'surface' copula-tensing. Instead I replace it with a more serious copula-tensing by characterizing tense as a copulative *de re* modality concerning endurance. This characterization consists of the following theses:

- (a) The proposition that takes an endurant as its subject has the form 'S-(tense, t)-P', where 'S', '(tense, t)' and 'P' respectively stand for a subject, a copula, which is a

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<sup>2</sup> [Lewis 2002]

<sup>3</sup> [Merricks 1994] [Hincliff 1996]

<sup>4</sup> [Taylor 1991] pp.80-87.

temporally modified tense, and a predicate. So *e.g.* ‘John was bent at t.’ is analyzed as ‘John-(past, t)-bent’<sup>5</sup>.

- (b) A tensed copula represents a kind of temporal mode of instantiation. It is a *de re* modality *sui generis* concerning endurance. Consequently there is no having *simpliciter* of a property by an endurant. It always has a property with a temporal mode.
- (c) Each of the past, the present and the future endurance is respectively a necessary, an actual, and a possible endurance in some temporal sense.

‘A temporally modified tense’ in (a) corresponds to Johnston’s modifying the copula of predication. He reified the copula as the ‘relation’ of instantiation, while I keep it unreduced as a ‘mode’ of instantiation. Though the copula with a temporal modification looks awkward, I take the past and future tense in general as a kind of ‘determinable’ mode to which a temporal modification gives their ‘determinate’<sup>6</sup>. As a result, both the past tense and the future tense are differentiated infinitely.

In (b) I reject the requirement for the having *simpliciter* of a property. As S. Haslanger points out, it is interesting that both perdurantists and presentists complain against qualified instantiation<sup>7</sup>. Lewis seems to suppose the having *simpliciter* to be atemporal mode of instantiation, in which case, serious tensors should happily deny it, as E. J. Lowe suggests<sup>8</sup>. Merricks, as a presentist, takes it to be of the present tense and requires other modes of instantiation to be ‘analyzed’ by it<sup>9</sup>. I wonder if it may not be too strong a requirement presupposing the validity of presentism; other modes just being ‘related’ to the present tense might be enough. Though E. Sosa also opposes to the exuberance of temporal exemplification, he concedes that it might be arguable that such an exuberance is only just, and a true reflection of reality<sup>10</sup>. So do I argue.

My adequacy conditions of serious tensing (2) and (3) are satisfied by (c). The actuality of the present makes it more privileged to the past and the future, at least to the degree in which the actuality is superior to other modalities in some sense. Moreover, the modal asymmetry between necessity and possibility guarantees the metaphysically fundamental asymmetry between the past and the future. However, you may wonder in what sense the past tense and the future tense represent necessity and possibility respectively. What do I mean by a necessary endurance and a possible one? These are what I would explicate in the next section.

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<sup>5</sup> The way of giving a temporal modification is variable according to the context. As for the complex tenses, I adopt Lowe’s way of metalinguistic reconstruction([Lowe 1998], p.94.).

<sup>6</sup> C. D. Broad also differentiated the past and future tense similarly, though his characterization of tense is different from mine([Broad 1938] I.35, 1.21.). T. Crane also referred to the determinates of a ‘mode’ of perception, though the topic is totally different([Crane 2009] p.489.).

<sup>7</sup> [Haslanger 2003] p.346.

<sup>8</sup> [Lowe 1988] p.73.

<sup>9</sup> [Merricks 1994] p.169f.

<sup>10</sup> [Sosa 1979] pp.36-38.

### 3 Endurance as Pure Becoming

The idea of taking the copula as the expression of modality is not new. R.Patterson interprets Aristotle's modality as copulative<sup>11</sup>. J. S. Mill treated tense as a typical modality and insisted on categorizing it corresponding to the copula<sup>12</sup>. In the contemporary philosophy, C. McGinn proposed to view modality as a copula modifier<sup>13</sup>. T. Yagisawa called McGinn's conception of modality 'modal tense', meaning that McGinn viewed modality similarly to tense<sup>14</sup>.

However, I do not know of the attempt to compare the past-future pair to the necessity-possibility pair, relating tense to endurance. To understand this connection, firstly we should grasp the essence of an endurant. Though Lewis's definition of endurance, 'a thing endures if it persists by being wholly present at more than one time', is prevalent, I prefer McCall and Lowe's definition of an endurant<sup>15</sup>:

An object endures iff (i) it lacks temporal parts, and (ii) it exists more than one time.

Firstly I take 'an endurant's existence at more than one time without having temporal parts' analogously with 'an entity's existence in more than one world holding its trans-world identity'. Though 'being wholly present at more than one time' in Lewis's definition is unclear and so rightly criticized by McCall and Lowe, one way of understanding it may be to interpret it as 'being as one in many momentary worlds keeping its trans-world identity,' in contrast with 'being as one in one four-dimensional world with many temporal parts'. Secondly it is also crucial in their definition that an endurant exists in plural times or 'moments' rather than 'possible worlds'. It follows that at each moment when an endurant exists it has an 'age' that is increasing every moment. This aging brings about an asymmetry among moments that has no counterparts in possible worlds.

It will be helpful here to invoke the concept of 'pure becoming' proposed by R. Taylor. He took pure becoming as something's growing older in a 'metaphysical' sense. He insists that it is a purely *a priori* notion, a consequence of something's simply being in time, and so its pure becoming obtains even if it does not have any intrinsic change. In his view every change entails pure becoming<sup>16</sup>. And I interpret that what Taylor meant by 'the age in a metaphysical sense' corresponds in some way to a temporal modification of the copula, at least at the most primitive level. That is, being 'metaphysical' is realized as a kind of '*de re*' modality in this case.

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<sup>11</sup> [Patterson 1995] p.3.

<sup>12</sup> [Mill 1874] I.iv.2.

<sup>13</sup> [McGinn 2000] pp.74-78.

<sup>14</sup> [Yagisawa 2010] pp.76-80.Yagisawa took McGinn's modality as a peculiar modal kind of abstract entity, while McGinn insisted on its irreducibility. Of course I side with McGinn.

<sup>15</sup> [Lewis 1986] p.202, [McCall and Lowe 2009] p.278.

<sup>16</sup> Though he insists that events also become older by an endless recession into the past([Taylor 1991] p.84.), I approve such a recession only as a metaphor. Even if we could recognize the pure becoming of events in some way, I would think that it is derived from the pure becoming of some endurants that are related to the events.

Taking pure becoming into consideration, we can say that the moments of an endurant's persistence so far are the necessary moments for the endurant to have its age at the present moment, while the moments from now on are not. For obviously *e.g.* being ten years old now (in a metaphysical sense) presupposes having become one, two, —, and nine years old, while it does not need becoming eleven, twelve—years old. Though that may be too trivial for words, triviality is often a sign of necessity. An endurant's past moments are, as it were, its 'necessary moments', while its future moments are 'possible moments' for it. This necessity of the past moments makes the past instantiation 'real', though no longer 'actual' at the present moment.

I believe that this view of the past moments makes the concept of trans-moment identity concerning the past moments different from both Lewis's counterpart relation and presentists' stipulative trans-world identity relation<sup>17</sup>. It is not either an external nor a contingent relation like Lewis's counterpart relation, because it is implied by the definition of an endurant as what has an age and so is an internal and necessary relation. Here it is crucial that the form of the predication is 'S-(tense, t)-P' rather than '(S, t)-tense-P', because in the latter case Lewis's counterpart theory would seem more reasonable.

On the other hand, it is also different from presentists' stipulative trans-world identity because it implies a real relation about an endurant in the real and concrete moments, in contrast with presentists' stipulative relation between the entities in the actual present moment and those in the abstract Ersatz moments. In my view, trans-moment identity concerning the past moments is an internal relation, and yet it is a source of a real relation at the same time. The past-tense predication presupposes or 'necessitates' the reality of the past moments, though they are not actual any more at the present.

## 4 Trinity of Tense, Endurance and Becoming

To return to the problem of intrinsic change, you may wonder why I bother with copulative modality and pure becoming. In fact, as L. Lombard says, just for solving the problem it does not matter whether the instantiation is relational or not<sup>18</sup>. Neither do you need serious tensing; merely the temporal modification of the tenseless copula would be enough. However, solving the problem of intrinsic change itself is not our goal; our most important task is to defend the endurantism by characterizing endurance properly, for which the solution of that problem is only a necessary condition. In this sense I approve one of Merricks's desiderata<sup>19</sup>:

(vii) A solution should follow directly from an account of endurance.

In my view, the reality of tense and becoming is another side of the reality of endurance; existing at plural moments without temporal parts *is* existing there growing

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<sup>17</sup> I explicated the ontological difference between the trans-(possible)world identity and the trans-moment identity in [Kachi 1999].

<sup>18</sup> [Lombard 2003] p.181.

<sup>19</sup> [Merricks 1994] p.174.

older in a metaphysical sense, and that sense is given by the trans-moment identity in which the moments are a kind of becoming worlds only whose newest one is actual. In addition, an endurant's pure becoming gives the basis of the *de re* modal asymmetry between the past and the future<sup>20</sup>. Moreover, it is crucial to relate the temporal modification, which corresponds to the (metaphysical) age of an endurant, not to a subject but to the copula, for insisting on the genuine trans-world identity rather than Lewis's counterpart relation or presentists' only stipulative identity. It is a part of the essence of an endurant to keep its trans-moment identity by growing older in a metaphysical sense. An endurant is an 'agent' in another sense that it is an entity which ages.

## References

- [Broad, C. D. 1938] *Examination of McTaggart's Philosophy*, Vol.II., Cambridge University Press.
- [Crane, T. 2009] Intentionalism, in [McLaughlin et al. (eds.) 2009], 474-493.
- [Haslanger, S. 2003] Persistence through Time, in [Loux and Zimmerman(eds.) 2003], 315-354.
- [Hinchliff, M. 1996] The Puzzle of Change, *Philosophical Perspectives*, 10, 119-136.
- [Johnston, M. 1987] Is There a Problem about Persistence?, *Proceedings of the Aristotelian Society*, suppl. 61, 107-135.
- [Kachi, D. 1999] The Ontology of Many-Worlds: Modality and Time, *the Paideia Project*, <http://www.bu.edu/wcp/Papers/Onto/OntoKach.htm>.
- [Lewis, D. 1986] *On the Plurality of Worlds*, Blackwell.
- [Lewis, D. 2002] Tensing the Copula, *Mind*, 111, 1-13.
- [Lombard, L. 2003] The Lowe Road to the Problem of Temporary Intrinsic, *Philosophical Studies*, 112, 163-185.
- [Loux, M. J. and Zimmerman, D. W.(eds.) 2003] *Oxford Handbook of Metaphysics*, Oxford University Press.
- [Lowe, E. J. 1988] The Problems of Intrinsic Change: Rejoinder to Lewis, *Analysis*, 48, 72-77.
- [Lowe, E. J. 1998] *The Possibility of Metaphysics*, Oxford University Press.
- [McCall, S. and Lowe, E. J. 2009] The Definition of Endurance, *Analysis*, 69, 277-280.
- [McGinn, C. 2000] *Logical Properties*, Oxford University Press.
- [McLaughlin, B. P., Beckermann, A. and Walter, S. (eds.) 2009] *The Oxford Handbook of Philosophy of Mind*, Oxford University Press.
- [Merricks, T. 1994] Endurance and Indiscernibility, *Journal of Philosophy*, 91, 165-184.
- [Mill, J. S. 1874] *A System of Logic*, 8th ed., Harper & Brothers Publishers.
- [Patterson, R. 1995] *Aristotle's Modal Logic*, Cambridge University Press.
- [Sosa, E. 1979] The Status of Becoming: What is Happening Now?, *Journal of Philosophy*, 76, 26-42.
- [Taylor, R. 1991] *Metaphysics*, 4th ed., Prentice Hall.
- [Yagisawa, T. 2010] *Worlds and Individuals, Possible and Otherwise*, Oxford University Press.

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<sup>20</sup> Though the tensed facts treated in this paper are restricted within the lifetime of one endurant, they can be extended by using some chains of endurants whose lifetimes overlap in their either end.