

# Genuine Becoming and the Barcan Formula<sup>+</sup>

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## 1. Introduction

Presentism is the doctrine that, necessarily, only presently existing things exist. Past things and states of affairs, according to this view, ceased to exist. The chief allure of Presentism is its promise to do justice to the idea that the passage of time is an objective (and absolute) feature of reality, and that it involves a genuine change in what exists. Caesar, one would like to say, simply does not exist: not any more, at any rate. We have no chance of establishing any direct epistemic contact with *him*, and it is awkward to think that *he* should nevertheless exist somewhere, enjoying some peculiar kind of non-being, or some very tenuous kind of (non-concrete) being. Much better to simply think that Caesar does not exist at all.

This theory of time appears to foot a double bill. On the one side, it promises to provide us with a clear and coherent explication of qualitative change. On the other side, if it proved to be a viable account of time, it would also provide us with an explication of the elusive notion of temporal passage. Qualitative change, according to this picture, ultimately occurs in virtue of the fact that absolute becoming occurs at all times. The explanation goes roughly as follows. Qualitative change consists in different monadic states of affairs obtaining at different times.<sup>1</sup> According to the presentist, at all times there are states of affairs that come to exist, and others which cease to exist. It is this

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<sup>1</sup> Cf. Tooley, 1996, 16.

relentless beginning and ceasing to exist which explains why different states of affairs obtain at different times, hence why things change. In a nutshell: different states of affairs *obtain* at different times because different states of affairs *exist* at different times, and different states of affairs exist at different times because new states of affairs keep springing into existence while others keep falling off the cliff.

This dynamic explanation of change promises to provide us also with a neat explication of the fact of passage. That a time that is previously not present should be afterwards present, or previously present and afterwards past, without experiencing change, is impossible, many think. What accounts for the continuous becoming present by previously non-present times? It is natural to think that absolute becoming could provide us precisely with the correct explanation for this kind of change. If being present is the same as existing, and being past involves failing to exist, then *becoming* present is the same as *coming* to exist, and becoming past the same as *ceasing* to exist. If things are so and if, as the Presentist thinks, at all times there are states of affairs that come to exist, and others which cease to exist, then it is a matter of conceptual necessity to infer that time really passes, for it is always the case that a time becomes present and immediately past.

The good thing about the idea of grounding qualitative change and passage on absolute becoming is that it appears to free the notion of change from the air of contradiction that beset it since the dawn of philosophy. If I was standing and I am now sitting, I changed from standing to sitting. *Prima facie*, this appears to require that someone who is standing could be sitting. After all, in fact, if it were not true that *I* could be sitting, before a sat down, then I could not be sitting now, for what is impossible cannot become true. But if he who is standing could be sitting, and standing and sitting are incompatible qualities, then the mere possibility that a standing person could be sitting involves a contradiction. A chief requirement of genuine change, in fact, is that it be *the same* persisting entity which bears the incompatible qualities. Presentism appears to avoid this difficulty precisely because absolute becoming involves the disappearance from reality of the trouble-making states of affairs. If I have changed from standing to sitting, then my (past) standing simply does not exist (any more), so it is never true to say that I am sitting and standing.

The obvious drawback of Presentism stems from the observation that, of that which does not exist, one cannot truly say anything, not even that *it* existed. That which does not exist any more, in fact, must simply fail to exist:

the expression “any more” that we append to the proposition that Caesar does not exist, does not qualify a particular way in which Caesar does not exist: there is only one sense in which an entity can fail to exist, and that is by failing to be an entity at all. Thus, if Caesar really went out of existence, there can (now) be no truth that is distinguishably about *him*. Yet we do appear to be able to say true things about the past (or about the future); for example, under any account of what it takes to be past, it must be (now) possible to truly say that Caesar did once exist. Likewise, it must be (now) possible to express the (true) proposition that Obama is taller than Caesar was. But how can that be, if Presentism is true and contingent truths are existence entailing (as many think)<sup>2</sup> Obama is claimed to be taller than... whom? This difficulty, often called the *truthmaker problem*, constitutes the foundation for the master argument against Presentism.

Standard expositions of the truthmaker problem (on the part of Presentists as well as of their foes), take the form of a *reductio ad absurdum*: (i) Suppose Presentism is true. Then (ii) our world doesn't include past or future objects or events. But (iii) if our world doesn't include past or future objects or events, then there is nothing in the world that could ground propositions about the past or future. Therefore (iv) propositions about the past and future lack truthmakers. But (v) at least some propositions about the past and future are true. Therefore, (vi) Presentism must be false.

Here I shall argue that there is a tension between the need to solve the truthmaker problem and the account of change and temporal passage that I have sketched above.

## 2. Going out of existence

Consider the following two sentences:

- (1) Caesar did exist.
- (2) *He* doesn't exist any more.

The anaphoric occurrence of ‘he’ in (2) inherits its semantic value entirely from the antecedent occurrence of ‘Caesar’ in (1). The proposition expressed by the conjunction of (1) and (2), in fact, is an instance of the following propositional function:

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<sup>2</sup> Cf. Armstrong, 2004.

(3)  $x$  did exist &  $x$  does not exist any more

What accounts, in a Presentist world, for the referential dependence ( $x=x$ ) that this discourse anaphora appears to require?

It is common to distinguish two kinds of anaphor-antecedent relations: identity of reference and identity of sense. There is identity of reference if ‘he’ and ‘Caesar’ (necessarily) refer to the same entity, while there is identity of sense if the two expressions serve to introduce the same description, or the same individual essence. I shall discuss these two options in turn, arguing that identity of reference is incompatible with the strict ontological diet of the Presentist, while identity of sense is incompatible with the Presentist’s account of change.

Let us start by considering the hypothesis that (3) is turned into a true proposition by assigning an individual entity as the value for  $x$ . The natural assumption is that the value in question is Caesar himself, the man. After all, it is *he* who is claimed to have gone out of existence. But this cannot be, for then we would have:

(a) (Caesar did exist → ∃ $x$ : ( $x$  did exist &  $x$ =Caesar)) → ∃ $x$ : ( $x = \text{Caesar}$ )

And:

(b) Caesar does not exist any more → Caesar does not exist → ¬∃ $x$ : ( $x$ =Caesar)

So (3) would be contradictory (hence false).

Surely the Presentist can’t deny the validity of (b): if the expression ‘Caesar’ is intended as referring to the past entity (Caesar, the man), then it surely presently fails to refer, for, we are told, there exists no such thing as a past entity. So the presentist must block the inference (a).

## 2.1. The identity of reference hypothesis

One way of doing so<sup>3</sup> is by denying the validity of the second inference contained in (a), while retaining the validity of the first. This entails conceding that the past existence of Caesar entails the present existence of an entity of which it is true to say that it *used to be* Caesar:

(Barcan formula) Caesar did exist → ∃ $x$ : ( $x$  did exist &  $x$ =Caesar)

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<sup>3</sup> See Bigelow, 1996, for an example of this strategy.

What is being denied is that the consequent of the Barcan formula further entails that the entity that used to be identical with Caesar is now (still) identical with Caesar:

[*The y: WAS (y=Caesar)] ≠ Caesar*

This maneuver effectively blocks the unwanted conclusion that there currently exists an entity that *is* Caesar. But is it compatible with the Presentist account of change?

Let  $c \stackrel{\text{def}}{=} [\text{The } y: \text{WAS } (y=\text{Caesar})]$ . According to the claim under consideration,  $c$  is not a past entity (there are no such things); it is a *present* entity that has the backward-looking property of having once been identical with Caesar.

Before evaluating the consequences of this manoeuvre for the Presentist's account of change, let me briefly discuss an obvious objection that comes to mind. Many philosophers, including many Presentists, balk at the idea that matters of identity (and distinctness) can be contingent, hence that two things may be identical at a time and different at another. The objection runs roughly as follows. If Caesar and  $c$  were identical (sometime before the year 44BC, say), then they surely *can be* identical, for what is impossible cannot have been the case. But if two things *can be* identical then they *are* identical (by the necessity of distinctness). These philosophers, therefore, will claim that accepting the validity of the Barcan formula *forces one* to also accept the second inference in (a). They will then claim that the manoeuvre under consideration is a non-starter. Presentists who subscribe to the necessity of distinctness (the doctrine that if two things *can be* distinct then, necessarily, they *are* distinct) will therefore opt for blocking the Barcan formula (I shall discuss this option later).

Let us turn back to the consequences of this manoeuvre for the Presentist's theory of change. Assume, for the sake of the argument, that the philosophers mentioned above are wrong, i.e. that it is somehow possible that  $c$  was identical with Caesar, but that it *isn't* any more. Does the existence of an entity like  $c$  solve the problem of the referential dependence that sentences like (1) and (2) appear to require? I argue that it does not.

If it is (now) true that  $c$  used to be identical with Caesar (when Caesar existed), then, it is intuitive to assume that whatever truth that could then be uttered about Caesar should have corresponded to an identical truth uttered

about  $c$ . Thus, for example, back then it was true to say that Caesar would have later ceased to exist:

$$(4) \text{WAS}(\text{WILL}(\neg\exists x:(x=\text{Caesar})))$$

Now, if  $c$  was really identical with Caesar (back then) then the true proposition expressed by (4) must be paralleled by the following (identical) truth:

$$(5) \text{WAS}(\text{WILL}(\neg\exists y:(y=c)))$$

But this cannot be, for (5) clearly entails that there currently is no entity that satisfies the description of  $c$ :  $\neg\exists y:(y=c)$ . And this amounts to denying that the Barcan formula applies to temporal operators, contrary to the hypothesis under consideration. The Presentist may be tempted to avoid this conclusion by pointing out that, when  $c$  was identical to Caesar, it did not satisfy the description [*The y: WAS (y=Caesar)*], which serves the purpose of identifying the relevant entity only now, after Caesar's existence has already become past. After all, when Caesar was alive it wasn't necessarily true to say that there (then) existed an entity which had the property of having been Caesar in the still further past (Caesar, in fact, did not exist before he came into existence). Thus, according to this response, when Caesar was alive,  $c$  did not exist *qua* satisfier of the description [*The y: WAS (y=Caesar)*]. It existed instead *qua* satisfier of a description of Caesar. This blocks the conclusion that it was then true to say that  $c$  would later (for example now) have failed to exist, for (5) now only entails that  $c$  would later fail to exist only *qua* Caesar. This response, however, has the unwanted consequence that it implicitly commits the Presentist to an Eternalist ontology.

If, in order to avoid the conclusion that there is no entity which used to be identical with Caesar, we were forced to specify a sense in which it was then true to say that  $c$  would later cease to exist, nothing would prevent us from saying that also Caesar has not really ceased to exist in the absolute sense, but only in the sense that he has ceased to exist-*qua*-Caesar. After ceasing to exist-*qua*-Caesar, he continued to exist *qua that entity which used to be Caesar*, i.e. he continued to exist-*qua*- $c$ . But this is clearly something that also Eternalists (of the dynamic brand) would be ready to concede! Sure it would account for the referential dependence required by the truth of proposition (3), but it would do so at the expense of conceding that entities *always* persist through change, although different descriptions may be true of them at

different times. This is certainly not compatible with the Presentist's ontological diet.

## 2.2. The identity of sense hypothesis

Many suggested, partly in response to problems such as the ones mentioned above, that we should regiment talk of past (and future) truths by introducing irreducible temporal operators. What makes past truths true, according to this proposal (I shall call it "Cambridge Presentism", for reasons to be discussed), is how things *were*, and not how they *are*: tenses do not tell what the properties of an individual are, but rather *when* an individual satisfying a certain description has its properties.

Formally, Cambridge Presentism blocks the unwanted conclusion derived in (a) by not allowing the Barcan inference, i.e. by not allowing that Caesar's past existence entails the current existence of an entity that was once Caesar. According to this option, the referential dependence involved in the anaphora (3) is certainly not identity of reference. The thesis is precisely that there cannot be identity of reference in cases of genuine absolute becoming. If there are some entities which existed in 44BC which now simply fail to exist<sup>4</sup> and we are not allowed to apply the Barcan formula to temporal operators, then now it is utterly impossible to express any singular proposition about those entities. For example, no singular proposition can now be expressed that is distinguishably about Caesar, the man. The proposition that *Obama is taller than Caesar* is only partially singular: it is singular in as much as Obama is concerned, but general as far as Caesar is concerned.<sup>5</sup>

Likewise, there are many propositions that we can now express that could not be expressed when Caesar was alive. Consider for example the (singular) proposition that you express when you say "I exist". Before you existed, say during 44BC, there was no individual entity of which it was true to say that *it will later come to exist*. Therefore no one could then express (however falsely) exactly the same proposition that you now express by saying "I exist".

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<sup>4</sup> For convenience, we have chosen Caesar as an example of an entity which has ceased to exist. This is entirely accidental. If one is worried that Caesar is so complex an entity that his departing from reality cannot have clear (non-vague) truth conditions, or if one believes, on independent grounds, that human beings never really cease to exist, one should just pick up her favourite subjects of absolute becoming (atomic instantaneous states of affairs, for example) and apply the arguments proposed in this paper to them rather than to Caesar.

<sup>5</sup> Cf. Prior, 1968, 13.

However, it must have been possible, even during 44BC, to claim that an entity which satisfies your description would have later come to be. The latter is a completely *general* proposition, one for which issues of individual identity (or distinctness) of reference simply do not arise.

Suppose that in 44BC a prophet prophesized your current existence. He claimed: “in 2013 there will exist a person with such and such characteristics ... etc”. Now, does it make sense, under these circumstances, to ask whether you are exactly the person who the prophet meant, or whether you are instead a *different* person, who happens to satisfy the same description that the person meant by the prophet *would have* satisfied if, counterfactually, the prophecy would have proved to be fulfilled? No! There is no issue of identity in these cases because, *ex hypothesis*, there is no persisting entity about which the question of identity may be significantly raised. The present truth of your past non-existence, like the past truth of your (then) future existence, and unlike the truth of your current existence, are wholly *general* truths.

It may be objected that, in expressing your past non-existence from the standpoint of the present, you *do have* the resources for expressing a singular proposition to the effect that it was true (during 44BC) to claim that *you* would have come to exist so many thousands of years later. You just have to grab yourself as the direct reference of any proposition expressed about *you*, and then you move back in time, to consider reality as it was during 44BC. By confronting yourself (the entity) with the descriptions of the entities that existed in 44BC, you can then express the *singular* proposition that it was *you* who did not exist then. These observations, however, are inconsistent with Presentism.

First, notice that the proposition that you would express using the semantic resources discussed above would not (and could not) be the same proposition as one which could be expressed in 44BC. The proposition to the effect that you don't exist, as expressed (and expressible) in 44BC, in fact, is a wholly *general* proposition; while the one you would express by dragging the direct reference to yourself to the past scenario would be *singular*. Secondly, and most importantly, notice that the truth of your past non-existence is a *past* truth. Accordingly, the Cambridge Presentist must think that the deployment of the semantic resources under consideration here require that one can drag the reference to a presently existing entity (yourself) into the scope of temporal operators, so as to be able to claim that it is *you* who then failed to exist. But this cannot be, for if direct reference to *you* could be made within the scope of a past operator, then, within the scope of that

same operator it would be true to infer that *you* exist. In short, if you allow for the inverse Barcan formula to apply to temporal operators, then all present entities can be argued to exist at all times, contrary to what the Presentist thinks.

Let us go back and check how Cambridge Presentism scores *vis a vis* the challenge posed by propositions like (3). The past existence of Caesar is now rendered by the general proposition that *there was* an entity that satisfied a given description:

$$(6) \text{WAS}(\exists x: (x = \text{Caesar}))$$

The general proposition expressed by (6) has no ontological implications as to what is presently the case (the Barcan scheme does not apply). In particular, it is compatible with the (equally general) proposition that Caesar presently doesn't exist:

$$(7) \sim\exists y: (y = \text{Caesar})$$

The identity of sense hypothesis, therefore, allows the Cambridge Presentist to express the facts of absolute becoming without incurring in the contradictions which beset the identity of reference hypothesis discussed in section 2.1. Propositions of absolute becoming like that expressed by the sentence "Caesar ceased to exist", according to Cambridge Presentism, are to be analyzed as expressing general comparative facts like:

$$(8) \text{WAS}(\exists x: (x = \text{Caesar})) \& \sim\exists y: (y = \text{Caesar})$$

As I shall argue, however, while it is true that blocking the Barcan formula frees the ontology of the Presentist from the inconsistencies discussed above, it fails to cohere with the Presentist's account of change and passage.

### 3. Change and absolute becoming

As I said in the introduction to this paper, absolute becoming is the secret ingredient which promises to allow the Presentist to formulate at the same time a *coherent* dynamic account of qualitative change and a coherent account temporal passage. As I shall argue, however, given the restricted ontological resources of Presentism, absolute becoming cannot afford to pay this double bill.

### 3.1. Being past and becoming past

Although the notion of passage is extremely hard to pin down, and different authors have radically different conceptions of it, I think that any dynamic account of the passage of time ought to comply with the following desiderata:

- 1.1.The fact(s) which make it true that a time ( $T$ ) *became* past, or that it *ceased* being present (fact  $\alpha$ ), must be distinct from each of the facts which make it true that  $T$  was present and *is now* past (fact  $\beta$ ).
- 1.2.Fact(s)  $\alpha$  must fully explain fact(s)  $\beta$ .

As I have argued elsewhere<sup>6</sup>, these desiderata apply to any conception of time which takes tense seriously, and derive from the observation that being past is a product, or an effect, of a process of becoming past (desideratum ii). The distinctness condition (desideratum i) follows from the necessary distinctness of the explanans from the explanandum (no state of affair can productively explain itself).

The current year is 2013. Things haven't always been so, however, as this year has been present only since last January, when it *became* present. Did something happen at New Year's Eve, in virtue of which 2013 became present? What did this becoming present consist of? Should we think that the fact that 2013 became present last January (fact  $\alpha$ ) is only the earliest part of the fact that 2013 has been present throughout a certain period of time starting from last January (fact  $\beta$ )? Or should we rather think that  $\alpha$  and  $\beta$  are two ontologically independent states of affairs?

There are inferential relations between the truths grounded by  $\alpha$  and  $\beta$  that suggest that there must be an intimate relation between them. Whatever feature of reality makes it true that the year 2013 *became* present, in fact, must be such as to guarantee that the year 2013 *has been* present for some time: nothing can *become* present without subsequently *being* present for some time (if only for a brief instant). Conversely, if it is true that 2013 has been the current year for some time, then it must be true that it *became* present at some point: if 2013 had never become present, it surely wouldn't be present now. Thus  $\alpha$  and  $\beta$  'entail' each other, or, as they say, they have the same existence set.

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<sup>6</sup> See my "If it ain't Moving it shall not be Moved", forthcoming in *Topoi*, Special Issue on Time and Time Experience, *Topoi*, An International Review of Philosophy.

If you do not ‘take tense seriously’, i.e. if you believe that there is no mind-independent, absolute fact of the matter as to what time it is, you will not be impressed by the intimate relation that obtains between facts of type  $\alpha$  and  $\beta$ . Events, you will probably concede, are temporally ordered. We were all born *after* the French revolution, for example: (nearly) no one wants to deny this comparative fact. The year of our birth is long gone and we are considerably older than we were then. Yet this would not be a *consequence* of the fact that we have been *growing* older at all intervening moments of time, or of the fact that the flow of time has *reached* later and later stages of our life up to the present one. In spite of our intuitions to the contrary, we would be older without having ever been growing older. If you think that reality is ‘static’ in this sense, you will believe that the becoming present of 2013 last January points to nothing over and above the fact that 2013 has been the current year since then (relative to our temporal perspective). Tense predicates such as ‘being present’, according to this view, in fact, do not cut nature at its joints, and do not point at irreducibly dynamic features of reality. You may then either opt for an ‘error theory’ of temporal flow, according to which it is simply false that the year 2013 *became* present last January; or you may prefer a revisionary stance, and claim that the fact that 2013 became present (fact  $\alpha$ ) is simply the earliest part of the fact that makes it true that this year has been present since last January (fact  $\beta$ ). Either way, the static view explains perfectly well the relation between  $\alpha$  and  $\beta$ . Under the error variant, fact  $\alpha$  simply does not exist, so the problem does not arise; under the revisionary variant, fact  $\alpha$  is a mereological part of fact  $\beta$ , which guarantees that they always exist or fail to exist together.

If, instead, you believe that tense properties and temporal passage are objective features of reality, like Presentists typically do, you do not have it that easy. Dynamicists, in fact, believe that events would not be temporally ordered (or things have different properties at different times) if time didn’t really flow, viz. if what time it is were not a mind-independent, absolute and *changing* matter of fact. Caesar did exist, but he no longer does. If the Dynamicist is to uphold the explanatory role that passage is supposed to play in her account of change, she should not be (merely) in the business of grounding this comparative truth; she should be further asking for the metaphysically independent grounds of Caesar’s *disappearance*, i.e. for the grounds of his *ceasing* to be.

If Caesar’s disappearance – whatever this fact consists of – is to explain – in an informative non-tautological way – the comparative truth that he did exist

while he doesn't now (or that he existed only up to the year 44 BC), then such disappearance cannot be grounded on the same facts that ground the comparative truth itself. By the same token, the Dynamicist cannot claim, like the Staticist does, that fact  $\alpha$  does not exist, or that it is a part of fact  $\beta$ . Nothing, she should think, can be changed if it is never found in a *state of changing* before the comparative change has been produced. In a motto: if reality is not changing it shall not be changed.

The following are but a few examples of how (i) and (ii) are implicitly assumed by authors with radically different views about time. McTaggart,<sup>7</sup> for example, argues that if there were to be an end of time, then the last moment, once become present, will remain present indefinitely, for it will never *become* past. On a similar vein, Sanson claims that "one could argue that the first moment of time, if there were one, was present but could never *become* present, because it was never future", and that "if there were only a single moment of time, and if it were present, it would be permanently present".<sup>8</sup> These observations appear to presuppose that (if time really passes) a time can *be* past only if it has *become* past first. William James considers the hypothesis that "God, as the orthodox believe, created the space-continuum, with its infinite parts already standing in it, by an instantaneous *fiat*. Past time now stands in infinite perspective, and may conceivably have been created so, as Kant imagined, for our retrospection only, and all at once".<sup>9</sup> Clearly the mere metaphysical possibility of James' admittedly paradoxical scenario presupposes that to *be* past is not the same as to *become* past.

The case for desiderata (i) and (ii) can be strengthened by noting that the proposition that a time T *is* past (or that it *was* present) represents a state of affairs that is *post factum*, in that it describes how things are strictly *after* T has already become past. The proposition that T *ceased* being present, on the contrary, represents a state of affairs that is *in medias res*, in that it must have occurred while T was still present: only present times can *cease* being present. In short, the event through which T loses its presentness must occur while T is still present, while the fact that T *is* past can only obtain *after* T's presentness has *already* been lost.

As I shall argue, the Presentist account of passage fails to satisfy these desiderata.

<sup>7</sup> McTaggart, 1908.

<sup>8</sup> Sanson 2011, 12, my emphasis.

<sup>9</sup> James, 1987, 1066.

### 3.2. Absolute becoming and the passage of time

In order to make her account compatible with her strict ontological diet, the Presentist was forced to claim that truths of absolute becoming (such as *beginning* to exist, *becoming* present, or *ceasing* to exist) are made true by wholly *general* comparative facts: facts that do not involve reference to any *particular* individual. So, for example, my particular becoming non-existent in the future (apparently a singular fact about myself) is conflated with the posthumous general fact that my description will be non-satisfied; while, as prescribed by desiderata (i) and (ii), it should precede it and explain it.

While there may be a general truth about my description being non-satisfied in the future, without *me* being there to substantiate this truth (hence without a correspondent grounding truth that involves *me* going out of existence), there can be no truth about *my* description *becoming* non-satisfied, without *me* being there to become non-existent. Surely, in fact, a description that is (already) not satisfied cannot *become* non-satisfied: it is already! Moreover, my description not being satisfied is not necessarily a fact about me. If it is a singular fact at all, it is a fact about my *description* (or individual essence) and about the world. But *my* going out of existence *must* be a fact about *me*, if any fact is! It must be a fact about *me* because it must serve as a (posthumous) explanation for the general fact that, in the future, *my* description will be unsatisfied (desideratum ii).

We get the illusion of trading with propositions that express genuine change because we are presented with (general) propositions which, upon reflection, change their truth-values depending on what time it is, from which it surely follows that there has been genuine change. The proposition that  $\exists x: (x = \text{Caesar})$ , for example, understood as pointing at a general fact, is clearly one that can be expressed at all times, and which may have had different truth-values at different times. If it did (and it did), then surely reality must have genuinely changed! This is why many have been tempted to think that absolute change could be the key to understanding qualitative change and passage. But this cannot be the whole story about the dynamic aspect of reality for, if it were, then *qualitative* change and passage would be ultimately grounded on the fact that some *Cambridge* change has taken place.

Cambridge changes are not *genuine* changes, at least in the sense that they cannot occur without being paralleled and grounded by underlying *intrinsic* changes. True, if my daughter gives birth to a child, I thereby *change* from not being a grandfather to being a grandfather. Likewise, if I will cease to

exist, then my description (or individual essence) will change from being satisfied to being non-satisfied. But such extrinsic change will have to be paralleled and substantiated by an intrinsic change which only *I* can undergo, just like my changing from not being a grandfather to being a grandfather must be paralleled and substantiated by some intrinsic change in my daughter. In short, it must be because *I* will become non-existent that *my* description will be non-satisfied. Likewise, it must be *because* Caesar, the man, ceased to exist, that it later became true that he did exist while he doesn't now. If Caesar's disappearance is to *explain* the comparative truth that he did exist while he doesn't now, then that disappearance, I argue, cannot be grounded on the same facts that ground the comparative truth itself.<sup>10</sup>

According to Cambridge Presentism, the fact that Caesar ceased to exist is not a fact that is distinguishably about Caesar.<sup>11</sup> The fact that Caesar went out of existence, we have seen, is analyzed as the conjunction of two wholly general facts: (1) the fact that there was a *person* called 'Caesar' and about whom it was true to say... etc., and (2) the fact that there is now no one called 'Caesar' and about whom it is true to say that etc. Now, fact (1) is compatible with Caesar being still existent, hence it contributes not at all to the truth of his departure from reality. Fact (2), instead, expresses the absolute non-existence of an entity which satisfies the description of Caesar, hence it expresses a circumstance that can only obtain *after* the explanatorily relevant change has already occurred. Now, while it is correct to infer the truth of Caesar's departure from reality from the conjunction of his past existence and current non-existence, still the very fact of his departure has eluded the expressive capacity of Cambridge Presentism.

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<sup>10</sup> Notice that the relevant notion of explanation here is not *causal* explanation: we are not in the business of revealing the causes of Caesar's death. We are in the business of explicating the metaphysical grounds of Caesar's disappearance from reality, a fact that ought to explain, in its turn, the former existence and current non-existence of Caesar.

<sup>11</sup> Notice that not even the proposition that this is not a fact about Caesar can be taken to express a truth about Caesar: it must be paraphrased as expressing the proposition that there is no person of whom it is true to claim that it was called 'Caesar' and that it has now gone out of existence (cf. Prior, 1968, 14).

#### 4. Conclusions

I have argued that, in order to uphold her ontological tenets in a coherent way, the Presentist is forced to analyze facts of absolute becoming as conjunctions of fully general facts which compare how reality was *before* changing with how it is *after* it has already changed. Unfortunately, so construed, absolute becoming cannot ground qualitative change and temporal passage, as it is often advertised to do. Under the proposed explanation, yesterday became past because some states of affairs which existed yesterday went out of existence, and others came to be. But this explanation, once it is unpacked in accordance with the need to solve the truthmaker problem (as discussed in sections 2.1. and 2.2.), amounts to the claim that yesterday *became* past because it *is* past, which is no explanation at all. Similar considerations apply to the proposed explication of qualitative change in terms of absolute becoming.

It is tempting to think that this result was only to be expected. As noted by many authors (e.g. Thomas and Prior)<sup>12</sup>, absolute becoming, lest it could be understood in terms of a persisting subject, is not a radical kind of change (from non-being to being, or *viceversa*): it is not a kind of change at all. It would be very surprising if we could analyze genuine change and passage in terms of the obtaining of facts which do not entail that change is happening. The A-theoretic fact that I am sitting now, or that I was standing, by themselves, are just as static as the B-theoretic fact that I am (tenselessly, hence changelessly) standing at 17:00 PM on 26/06/2013 is. To claim that I was standing, in fact, is not the same as claiming that my standing was *becoming* past (which would indeed express the fact that non comparative change was taking place); the fact that I was standing simply conveys the thought that my standing *is* past, which is a state of affairs that can obtain only *after* the relevant change (viz. becoming past) has already happened.

Any realist account of the passage of time must explain in virtue of what each present moment *transits* into the next, and in virtue of what the domain of objects which existed in the past has *shifted* into that of the objects which presently exist. The difference between the domain of entities in which our variables presently range and that in which they used to range in the past, is only a posthumous unchanging product of the relevant shifts of which the passage of time consists.

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12 Cf. Prior, 1968, 73.

I have argued that the price for restricting the ontology only to presently existing things is that absolute becoming, contrary to what is often claimed, cannot ground the truth passage.

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