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Abstract Entities in a Presentist World

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Abstract: How can a metaphysics of abstract entities be built upon a metaphysics of time? In this paper, I address the question of how to accommodate abstract entities in a presentist world. I consider both the traditional metaontological approach of unrestricted fundamental quantification and then ontological pluralism. I argue that under the former we need to impose two constraints in the characterization of presentism in order to avoid undesired commitments to abstract entities: we have to characterize presentism as a thesis only about the concrete, and we also need to avoid the widely held distinction between tensed and tenseless senses of existence. Under ontological pluralism, instead, I argue that we can naturally accommodate any view of abstract objects in a presentist world.

Keywords: presentism, abstract objects, unrestricted quantification, ontological pluralism

Introduction

Do abstract entities such as natural numbers or fictional characters exist? And do past and future things exist, or only that which is present? These two questions belong to two venerable areas that have been explored rather independently in contemporary analytic metaphysics. On the one hand, the metaphysics of abstract objects; on the other, the metaphysics of time. How can these two fields be integrated? Their combination has been partially explored by some studies of time and by studies of modality, particularly in the debates about necessitism and contingentism. In this paper, I assess how this connection can be established for a specific theory of time and for certain metaontological approaches to abstract objects. As to the former, I focus on presentism. As to the latter, I focus on both the position that holds that there is a unique unrestricted sense of "existence" and the position that holds that there are different senses of "existence". With the first I think of the approach that has been called

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metaontological monism, associated with Quine (1954), Lewis (1990), or van Inwagen (2003). With the second I think of ontological pluralists such as Husserl, McDaniel (2009), or Turner (2010). According to the latter, in contrast with the former, not everything that we unrestrictedly quantify over in the regimented language exists in the same way. I elaborate these views in Section 2

On the other hand, we have theories of time. It can be said that theories of time reflect about what exists and, relatedly, about temporal passage – the *ontological theses* and the *dynamical theses* respectively, in the terminology of Miller (2013). Theories can agree on ontology but differ in their account of temporal passage, and *vice versa* (Block universe and moving spotlight theory are examples of the former; presentism and growing block theory of the latter). I will focus on the ontological thesis and will be neutral about temporal passage.

Now, we could say that theories of time reflect about what exists without necessarily aiming to be exhaustive. For instance, they might be silent about the existence of abstract entities. Their integration into a systematic all-encompassing metaphysics, in the tradition of modern philosophy, would then be straightforward – we would write different unrelated chapters for each topic. However, in this article I explore an influence between the two fields; namely, under the approach of unrestricted quantification, presentism yields certain ontological commitments to abstract entities. If we wish to avoid this influence, I argue that in our formulation of presentism we have to 1) explicitly restrict it as a thesis only about concrete entities, *and* 2) avoid the distinction, familiar in the literature, of tensed and tenseless existence. This assessment leads us to rule out a variety of accounts of presentism, and suggests a correspondingly refined version. Otherwise, I argue that the undesired ontological commitments to abstract entities can also be avoided by restricting the scope of the existential quantifier, in the line of ontological pluralism.

In Section 2, I outline the metaontological approaches to abstract objects under consideration. In Section 3, I consider the best characterizations of presentism at our disposal. The combination of presentism with the metaphysics of abstracta is not novel to the present paper, so in Section 3 I also consider the theories already available that take into account both abstract objects and existence in time. In Section 4, I point out the consequences for the ontological status of abstract entities if we live in a presentist world, and I explain why we would prefer to resist them. Then in Section 5, I show how to restore the neutrality of presentism with respect to the ontological status of abstracta: in Section 5.1, by imposing the two constraints mentioned above; in Section 5.2, by endorsing ontological pluralism instead of unrestricted fundamental quantification.

Theories of Abstract Objects and Senses of "Existence"

There are ontological views that hold that "existence", although ordinarily predicated of entities as diverse as Barack Obama and prime numbers, is nevertheless used in a different sense depending on the case. Hence, the ontological commitment we incur is correspondingly different. In contemporary metaphysics, central attention has been paid to establishing the scope of the existential quantifier in an appropriate fundamental regimented language¹ Certain views distinguish the ontological commitments of sentences that affirm the existence of concrete entities from those of (direct or indirect) existence claims regarding abstract entities: mathematical objects, fictional entities, etc.² For the sake of clarity, I shall focus on one of these views: ontological pluralism. Ontological pluralism contends that there are different ways of being, and so the "existence" that appears in propositions involving concrete entities refers to a different kind of existence from that which appears in propositions involving abstract entities. As Jason Turner puts it:

"Insofar as students in their first philosophy class have a particular view in mind when they say that what it is for there to be a number is very different than what it is for there to be a coffee cup, this is that view". (Turner 2010, 5)

Contemporary defenders of this view include McDaniel (2009), Turner (2010) and Spencer (2012), who emphasize that such a view traces back to Aristotle – "being is said in many ways" – and that has been upheld in one way or another by Moore, Russell, Husserl, Heidegger, and Meinong among others.³

In contrast to this approach there is the influential and nowadays mainstream approach of unrestricted ontological commitment, originally advocated by Quine (1954) and subsequently adopted by Lewis (1990), and van Inwagen (1998).⁴ This

¹ See e.g. Chalmers et al. (2009, Ch. 1, 5, 10, 13, 16), or Sider (2011, Ch. 9).

² By "direct or indirect" I refer to the fact that some claims might not be explicitly existential claims but nevertheless it can be inferred from them an existential claim. Examples are those labelled as part of parafictive or metafictive discourse such as: "Sherlock Holmes lives in Baker street, London" (Garcia-Carpintero (2007, 1), from which we can infer a claim stating the existence of Sherlock Holmes. (This holds only if logic is classical rather than free).

³ Cf. McGinn (2000). As for the precursors cited, see Aristotle (VI c. B.C., IV.2), Heidegger (1967), Husserl (1900), Meinong (1960), Moore (1903, 110–13), and Russell (1960, 98).

⁴ See also Lewis (1983), Quine (1957, 1960), Fine (2009), Sider (2001, 2009, 2004), and van Inwagen (2003, 2008, 2009).

metaontological approach can be called "monism" and is associated with a *unique* and *unrestricted* fundamental quantifier.⁵

Now, to pave the way for the coming discussion, consider the following stipulation of different senses for the term "existence", associated with a pluralist view – a stipulation, though, that according to that view carves reality at the joints. First, consider the pre-theoretic intuitive sense of "existence", understood as *physical concrete spatiotemporal location*. According to the standard scientific image, there is nothing more than the material world of matter, i. e. the conglomerate of elementary particles or fields, or whatever else makes up the physical universe. This is the first sense of "existence", call it "existence₁".

Before explaining how the pluralist makes use of this first sense, consider the simpler nominalist worldview (a standard version of it). According to it there is no place for abstract entities, and so nominalists maintain that "existence₁", – and its analogous existential quantifier " \exists_1 " in the regimented language – is the only fundamental sense of "existence". In what has come to be known as "ontologese", the supposed best language to describe the fundamental structure of the world, fundamental existence has been dubbed as "existence₀" (Korman (2015), Ch. 6 taking cue from Dorr (2005) and Sider (2009)). Adopting this terminology, we can say that the nominalist maintains that existence₀ = existence₁.

Now, it is of course not guaranteed that the nominalist is right and the only fundamental sense of "existence" is physical concrete spatiotemporal location. For instance, there might be a more encompassing sense of "existence", "existence*", which perhaps better captures what really exists and does not leave out of our ontology genuinely existent objects – so that existence $_0$ = existence*. This line of thought is typically followed by the metaontological monist.

Likewise, we can stipulate that for abstract entities, the term "exists" has another meaning, associated with a quantifier " \exists_2 ", different (disjoint and mutually exclusive) from " \exists_1 ". Ontological pluralists will identify one kind of existence with the first sense and another kind of existence with the second sense – a way of existing for the concrete and another way of existing for the abstract. On the view of McDaniel (2009, Forthcoming), these kinds of existence correspond respectively to two different *semantically primitive restricted quantifiers*: quantifiers that, in virtue of their meaning, only range over some of what there is. They are two among many semantically simple fundamental

⁵ It is also called "realism" in (Sider 2001, xxi), (Sider 2009, 397) or in (Chalmers 2009, 77). But the term "realism" has a variety of meanings still within metaontology (Jenkins 2010), so I will thus better stick to "monism". Regarding the relation of quantification with ontology, see Uzquiano (2014, esp. sec. 4).

quantifiers. Notably, they cannot be defined by restricting an otherwise unrestricted quantifier with a predicate or sentential operator.

Conversely, a metaontological monist argues that the unique fundamental quantifier, call it " \exists ", also ranges over abstract entities and therefore encompasses the domain of the quantifier " \exists 2". Notably, the metaontological monist stresses that the same kind of existence is had by each entity that exists. Existence can be interpreted either as a primitive notion or as a fundamental property, but in any case there is a unique way of existing for everything that exists.

Presentism and Senses of "Existence"

How can these metaontological views reconcile their ontological commitments concerning abstract entities with a presentist metaphysics? To answer this, we first have to characterize presentism. Presentism is the theory of time closest to the common-sense image of the layperson; it is the pre-theoretical approach to what exists with respect to past, present and future entities. Namely, that which exists is only the present. Conversely, no non-present objects exist. So, while you now reading this article exist, Napoleon does not exist anymore and my future grandsons do not exist yet. Presentism is one of the A-series accounts of time (which also include the growing block theory and the moving spotlight theory), characterized by a belief in an objective changing present – in contrast with B-series views, which do not privilege any particular time. From a B-series viewpoint, past, present and times - and objects - are ontologically on a par. Eternalism, the leading B-series theory, holds that Napoleon exists and that my future grandsons exist in a genuine, fundamental, non-metaphorical sense. Eternalism gives equal ontological weight to all things past, passing and to pass. It does not give a privileged ontological status to "now"; i.e., the past and the future are as much part of the "furniture of reality" as is the present.

Now, for the following discussion we need a precise characterization of presentism. This doctrine has been characterized in its most minimal form by:

(P): "Only present objects exist"

Yet, as noted in the literature, depending on how we read (P) this definition turns out to be either trivially true or obviously false. Here comes to the fore a distinction between senses of "existence" widely employed in the literature on the philosophy of time: *a tensed and a tenseless reading*. The tensed "exists", call it "exists_a", entails "exists now". The tenseless version, call it "exists_b", is

instead neutral with respect to temporal context of utterance, and equally applies to whatever did exist, exists now, and will exist. How, then, should we understand the "exist" of (P)? Both senses of "existence" lead to problems: the tensed sense makes (P) trivially true, while the tenseless sense makes it obviously false. If we read "existence" as "existence $_a$ ", (P) will be trivially true, as even an eternalist would endorse (P) so understood (of course present objects exist in the present). On the other hand, if we read it as "existence $_b$ " it will be obviously false, for dinosaurs exist $_b$ but are not present.

Nevertheless, we know what we meant to say here, so a charitable reading should allow us a proper definition: existence for the presentist is *exclusively* existence in the present, existence. The eternalist denies that, so this reading is not trivially true. Thus, presentist's belief is that *only* existence a is a *fundamental* sense of "existence" – where by "fundamental" I mean the common view of "existence" being joint carving. Indeed, according to the presentist, tenseless existence does not carve reality at its joints, as tenseless existence applies to the non-existent: it applies to things that do not fundamentally exist. Here the discussion from the previous section should be helpful. Recall how nominalism takes fundamental existence to be existence a. Thus, we can understand (P) as meaning the same as:

(P'): "Only present objects fundamentally exist" where present objects means objects presently existing.

We can thus say that the presentist maintains that fundamental existence is existence in the present: existence₀ = existence_a. Notably, (P') is true for the presentist, but not trivially true, given that an eternalist would not agree that existence₀ is only existence_a.

This is a common way to understand presentism; philosophers that have spelled out this characterization in one way or another include Prior (1972), Zimmerman (1996), Craig (1997), Merricks (2007), Tallant (2014), and Baron

⁶ For further characterizations of presentism and its opponents, especially in relation with the triviality problem, see Keller (2004b), Wuthrich (2012), Gołosz (2013), Hestevold and Carter (2002), Zimmerman (2004, Ch. 2), Crisp (2003), or Miller (2013). See also Sider (1999), Markosian (2004), Zimmerman (2008). Furthermore, an account of degrees of presentism is (Smith 2002). Meinongian metaphysics and presentism have been combined in (Gallois 2004), (Hinchliff 1988) and (Paoletti 2016); against it see Keller (2004a) and Markosian (2004). Another metaphysical debate in the vicinity dealing with the modal status and the existence of concreta and abstracta in time is that of permanentism vs. temporaryism (in turn related to necessitism vs. contingentism and actualism vs. possibilism); see Williamson (2002, 2013).

(2015). In fact, Alyssa Ney's texbook says that for the presentist " (...) 'exists' means the same as 'exists now'" (Ney, 2014, 147).

We will survey other characterizations of presentism, yet with (P') we can begin to address our main question: How the presentist can integrate supposedly timeless abstract entities into the solely existing "now"?

Abstract Objects in a Presentist World

The Desideratum of Neutrality over Abstracta

Regardless of whether we create or discover a symphony or the scale of nondenumerable sets, it seems that such abstract entities are something beyond the present and beyond any specific time. So, how can the presentist integrate these timeless, seemingly eternal, entities into the solely existing "now"?

Abstract objects, indeed, are traditionally defined as non-spatiotemporal and causally inert (see *e.g.* Stanford's Encyclopedia entry by Bueno (2014)). Tallant (2014) notices that incorporating abstract entities into the presentist's ontology is not straightforward. That abstract objects exist in the only way that presentism allows, i. e. that they exist presently – or exist_a – "seems an odd and rather extreme commitment (...) it is a hallmark of such abstract objects that they exist timelessly – or outside time" (Tallant 2014, 498).

Likewise, remember that for the presentist there is no tenseless existence, but then: "one might believe in God or numbers and believe that these entities exist outside of time. If so, one will think they exist in the tenseless sense of 'exists'." (Ney 2014, 168, fn 10).

Similarly, Williamson (2013, 24) underlines that, given an understanding of presentness as concreteness, i. e. as that which is spatially located, presentness is "incompatible with the platonist thesis that there are spatially unlocated abstract objects such as numbers. But presentism was not supposed to have such ramifications for the philosophy of mathematics."

Hence, we might be tempted to conclude that presentism entails that abstract objects do not exist, or that they exist only in the present. But this would be too quick. We would prefer presentism to be neutral on the existence abstract objects – neutral on whether they exist or not and, if they do, on how they exist. In the rest of the paper I show how to meet this desideratum.⁷

⁷ Of course, I am not exluding the legitimacy of theories that claim that abstract objects exist only in the present. In fact, the classic view of universals *in re* would (arguably) be such a

The Lack of Neutrality

(P'), which captures a standard approach in the characterizations of presentism, solves the triviality objection, but clearly faces the lack of neutrality with respect to the status of abstract objects. Given that there is only present existence, we are forced to say that abstract objects, if they exist, then they only presently exist.

Tallant (2014) discusses this issue when he proposes a similar definition of presentism. According to him, presentism can be defined by "Existence Presentism" (EP):

(EP): "Presence is existence"

Both in (P') and in (EP) there is a lack of neutrality with respect to the ontological status of abstract objects. In response to this issue, Tallant proposes two answers. One of them is to deny that it makes sense to talk of "existence outside time". This, he says, is because the very objection – how can abstracta exist outside time? – cannot be coherently formulated, as we do not have the linguistic resources to talk about such objects; the reason being that neither reading of "existence", tensed nor tenseless, expresses the notion of existence outside time. Thus, sentences such as "Abstract objects exist" cannot be read as expressing a notion of existence outside time; therefore "the statement simply makes no sense" (Tallant 2014, 499).

This first answer, though, is flawed in two ways. First, regarding its conclusion, to deny that it makes sense to talk of timeless existence might seem suspicious, given that throughout the history of philosophy we have always granted at least the intelligibility of this idea – including those of us who deny the existence of timeless entities. In fact, it seems that we do have resources to talk about existence outside time; we have seen in Section 2 some ways to refer to kinds of existence other than the uncontroversial existence₁.

Secondly, Tallant's argument is not valid as stated. That we would not have the linguistic resources to talk about such entities – to express such existential claims – does not imply that existence outside time is impossible. In short, that something is ineffable does not imply that it cannot be the case.

There is a second solution proposed by Tallant (2014, 499). He suggests that we admit that such objects are indeed *changeless*, while maintaining that they only presently exist. This allows us to say that *in a sense* they are indeed timeless, but in a way compatible with their existing only at each present time. This view is, he admits, revisionary. The idea that abstracta exist only in

theory. Rather, the aim of the paper is to investigate how to achieve a neutrality between presentism and theories of abstract objects.

the present seems discordant with traditional characterizations of abstracta. Even worse, the sense in which abstracta are here said to be "timeless" seems merely metaphorical. They are changeless but, strictly, they are not timeless. They exist presently and not outside time. Thus, this second solution is revisionary and, more generally, is not neutral.

Presentism Without Presentness?

Given this diagnosis, another option is to seek an alternative characterization of presentism. The characterizations found in the literature ultimately amount to the characterizations presented above – (P), (P'), and (EP) – with (arguably) minor variations. Nevertheless, there have been attempts to define presentism from a different approach. A recent attempt is that of of "Presentism without presentness", due to Correia and Rosenkranz (2015). Aware of the hazards that presentism faces from inaccurate definitions (e. g. that of being read as trivially true or clearly false, as explained in Section 3), Correia and Rosenkranz provide a definition of presentism without appeal to any notion of presentness or cognate notions such as concreteness. Yet I predict, at the risk of ruining the suspense, that this account will not be able to play the role we need either.

By means of the notions of *contemporaneity* (where m is contemporaneous with time t iff m *is located at* time t), of "one-off" (which essentially amounts to define the notion of being *instantaneous*) and of *being in time* (defined as: m is in time iff sometimes, for some time t, m is contemporaneous with t), presentism is defined as:

(PWP): Always, $\exists t(t \text{ is one-off } \land \forall x(x \text{ is in time } \rightarrow x \text{ is contemporaneous with } t)$).

The nuances of this definition should not distract us from the core idea: if something exists in the only existing time – the present – then something is contemporaneous with that time; likewise, there is always an instantaneous time – the present – with which everything in time is contemporaneous.

Let us grant that as (PWP) intends, there is no notion of presentness.⁸ However, our problem was not with presentness itself, but with abstract objects being constrained to live always and only in the present. And this is not

⁸ Which is disputable, as the stated definition of contemporaneity implies (or is even equivalent with) the relational notion of *being present at the time* t. See Correia and Rosenkranz (2015, 25) for a reply to this.

avoided by (PWP). As the authors say (*ibidem*, p. 24), to be contemporaneous is existence-entailing. Then, non-concrete things are allowed to exist "as long as they are located at the only time that presently exists" (Correia and Rosenkranz 2015, 24, 26). This is due to the similarity of (PWP) with (P) and (P') with respect to its quantification over everything – hence the " \forall " – not discriminating the concrete from the non-concrete. So with (PWP) we still face the same threats presented at the beginning of this section.

Fixing the Neutrality

After showing the commitment to the tensed existence of the abstract, I now propose two ways to avoid it, in 5.1 and 5.2 respectively. The first is to refine our understanding of presentism while maintaining the unrestricted fundamental quantifier. Here we must explicitly restrict presentism as a thesis about the concrete, but this will not suffice. We will also have to abandon the dichotomy of a tensed and a tenseless existence. The second strategy is to abandon the traditional approach of unrestricted quantification and instead endorse ontological pluralism. This option naturally restores the desired neutrality, and is still immune from the triviality threat (and, besides, solves the infamous grounding problem).

Restrict to the Concrete and Abandon the Tensed/Tenseless Dichotomy

Explicit Restriction to the Concrete

Here, the first step is to apply (P') only to concrete entities. So (P') should be better understood as (P"):

(P"): "Regarding concrete objects, only present objects fundamentally exist"

Thus, the presentist can maintain that, in a non-fundamental sense, there are past, present, and future concrete entities; but in the sense of what fundamentally exists, only present concrete entities exist. So understood, presentism is a thesis only about concrete objects and is silent about abstracta. Since this is how, I believe, presentism has to be understood, I think it would be unjustified to object that an explicit restriction to concreta is *ad-hoc*.

Prima facie, (P") seems to resolve the problem: abstract entities' existence is an orthogonal matter for (P"), and an unrestricted fundamental quantification is able to distinguish between concreta and abstracta through non-fundamental quantifiers. However, even when presentism is reformulated in this way, its neutrality with respect to abstract objects is just apparent. A monist metaontology, though able to distinguish non-fundamental quantifiers for concreta and for abstracta, has a unique fundamental unrestricted quantifier that is the same for each of them, sometimes labelled as " \exists_0 ". The problem now is that according to (P"), existence₀ (fundamental existence) is existence_a (present existence) with respect to concreta. But then the existence_q of concreta "propagates" to abstracta, given that both concreta and abstracta share the same unique way of existing. In other words: since regarding the concrete, existence is present existence, i.e., existence₀ = existence_q (and as I explained above, this is how (P) has been read to avoid the triviality objection), then the existence of the abstract, which is the same existence₀, also is present existence, existence_a. Therefore, also under my alleged refinement (P"), unrestricted fundamental quantification implies that if abstracta exist, they exist only in the present.

Avoid the Tensed and Tenseless Distinction

So, the way to avoid the lack of neutrality consists not only in explicitly restricting presentism to the concrete, but also in abandoning the need to invoke the tensed/tenseless distinction. We must not understand, as we have been doing, fundamental existence as present existence – i. e., we must deny that existence₀ = existence_a. And we of course must not understand fundamental existence as tenseless existence. Thus, we have to refuse to choose between these two senses of existence. So contrary to what has been suggested so far, the "present objects" of (P") must not be read as "presently existing objects". Rather, in (P") we just claim the fundamental existence of present concrete objects, where presentness is a property of objects.⁹

At this point, there is an alleged critique that one may think that applies to (P") so understood. The critique questions what is it for something to be present. In fact, some have stressed that presentness, understood as a property, is a redundant property. For instance, Merricks (2007, 125) says that "to exist at the present time just is existing". Or Williamson (2013, 24) says that "when one says that what is present is simply what there presently is, the clause 'presently' makes

⁹ That is, now we have only fundamental existence *simpliciter* and, on the other hand, objects can have a property, say "P", which is to be present.

no difference in truth-value". Similarly, see Prior (1972), Craig (1997, 30), and Sosa (1979, 50). However, I find hard to see this redundancy as a problem. As least as we are understanding presentness in (P"), presentness is not devoid of content: presentness is existence *simpliciter* of the concrete. Hence, it is not problematic, but to be expected, that sentences involving presentness and existence (such as those by Merricks and Williamson) will contain redundant information.

Do we then have resolved the neutrality with respect to abstracta? Yes, for there is no more "propagation" of tensed existence to the abstract. Even if the unrestricted fundamental existence is shared by concreta and abstracta, now (P") is not claiming that fundamentally there is only tensed existence; therefore, if abstracta would exist, they would only share the existence *simpliciter* of present concreta.

Do we still resolve the triviality objection? Yes, for (P") is true for the presentist but false for the eternalist.

Is it legitimate to avoid the choice of a tensed or tenseless sense? It may seem that these two senses exhaust the logical space, so that one of the two readings has to be endorsed. I think, though, that the uncontroversial intelligibility of existence *simpliciter* in (P") suffices to refute the need to commit to either of the two senses. This reading, common in other areas of metaphysics, results in a better way of accounting for presentism. Be that as it may, if one doubts about this legitimacy (or has any other objection to this first strategy), we should then consider the next proposal. Interestingly, this would amount to favour ontological pluralism over unrestricted fundamental quantification.

Restricted Fundamental Quantification

We now arrive at the second path announced at the beginning of the section. The idea here is to admit that the concrete and the abstract exist in different ways, thereby enabling us to maintain presentism's desired neutrality about the ontological status of the abstract. This approach works also with standard definitions of presentism such as (P).

Ontological pluralism maintains that there are different ways of being. Accordingly, McDaniel (2009, Forthcoming) makes use of the notion of semantically primitive restricted quantifiers. Among the variety of primitive quantifiers, we can distinguish one that ranges just over the concrete, and another that ranges just over the abstract. ¹⁰ We do not need to commit to a specific variety of

¹⁰ This of course is not a contemporary insight. It traces back to the employment by Meinong (in turn drawing from medieval scholastic metaphysics) of two terms, "existence" and

pluralism; which are genuinely different ways of being, and which are not, is something for pluralists to discuss elsewhere.¹¹

We can then naturally combine pluralism with our characterizations of presentism. We can read (P") as claiming that tensed existence is concrete existence, i. e., existence $_a$ = existence $_1$. The abstract has another way of being, call it 'existence $_2$ '. (P") is silent about it and, notably, there is no longer any propagation of presentness, given that concreta and abstracta do not share a fundamental quantifier, but rather each have their own mode of being.

What about the other characterizations of presentism? (P') can be read like (P"), such that only present objects $exist_1$. Thus, the abstract can be similarly said to $exist_2$, if at all. In the phrasing of (EP), according to which presence is existence, we have no problem either: presence *is* that kind of concrete existence; existence₁. Less obviously, (PWP) characterizes presentism in terms of being contemporaneous, an existence-entailing relation, and the problem was its unrestricted quantification. Now, under ontological pluralism, we can see that "existence" here can be understood again as existence₁, and that the universal quantifier can be understood as the pluralist's semantically primitive quantifier " \forall_1 " that ranges only over concreta.

To conclude, let's see how McDaniel's (Forthcoming) presentism fits with what has been said so far. McDaniel (Forthcoming, Ch. 3, 73) characterizes presentism as:

(McP) – Presentism: The view that there is a metaphysically fundamental sense of " \exists " such that " $\neg \exists x : (x \text{ is a past or future object})$ " is true.

In order to attain the neutrality with respect to the abstract, we can interpret the metaphysically fundamental sense that (McP) talks about as restricted to the concrete: it is " \exists_1 ".¹²

McDaniel (Forthcoming, 73–4) fleshes out different modes of being than those here proposed, so we can assess whether or not they overlap. He elaborates his "Pluralist Existential Presentism" distinguishing two kinds of existence:

[&]quot;subsistence", for different modes of being. With the difference that subsistence is intended to comprehend both the concrete and the abstract.

¹¹ There is room to discuss, for instance, whether some modes of existence enjoy more being than others, whether they should not intersect, etc. Of course, pluralists in turn face difficulties, such as those related with accepting disjoint fundamental quantifiers; see e.g. (Sider 2011, Ch. 90), or (van Inwagen 1998).

¹² In contrast, eternalism would instead say that it is false, hence the formulation is not trivially true. McDaniel characterizes presentism's main rivals analogously (*ibidem*):

the way that past things exist, represented by " \exists_p ", and the way that present things exist, represented by " \exists_c ". Thus, he defines presentism as the view that there are two metaphysically fundamental meanings for the unrestricted quantifier " \exists ": " $\exists_p x$ " ranges over all and only past objects, whereas " $\exists_c x$ " ranges over all and only present objects. There is, McDaniel says, no fundamental quantifier that ranges over objects of both domains.

What happens, then, with our two distinctions of senses $\{\exists_1, \exists_2\}$ and $\{\exists_p, \exists_c\}$? Are all four senses disjoint semantically primitive quantifiers? The answer depends on the metaphysics of time at stake. Yet sticking to a presentist world, it is straightforward to see that McDaniels' existential quantifier of the present \exists_c is the same as \exists_1 . Indeed, McDaniel uses the subscript "c" to denote concreteness, in opposition to the "p" of past existence of \exists_p . At this point we arrive at a novel situation, which is that in a presentist world, given McDaniel's ontological pluralism, the number of disjoint fundamental quantifiers that we can identify is (at least) three. For the past existence of \exists_p is not the abstract existence of \exists_2 ; and they do not overlap, satisfying his requirement of ranging over disjoint domains.¹³

Conclusion

We have explored how abstract objects can be accommodated in a presentist worldview. We encountered a challenge: to characterize presentism as a doctrine neutral on the existence of abstracta. We assessed the cost to attain the neutrality, which we took to be a reasonable desideratum. Thus we concluded that, if we endorse the approach of unrestricted fundamental quantification, we have to characterize presentism avoiding the tensed/tenseless existence

Growing Block Theory: The view that there is a metaphysically fundamental sense of " \exists "such that each of the following is true: " $\exists x : (x \text{ is a past object})$ ", " $\exists x : (x \text{ is a present object})$ ", and " $\neg \exists x : (x \text{ is a future object})$."

Eternalism: The view that there is a metaphysically fundamental sense of " \exists " such that each of the following is true: " $\exists x$: (x is a past object)", " $\exists x$: (x is a present object)", and " $\exists x$: (x is a future object)."

However, both seem inadequate, as for instance Growing block does not simply entail that something past exists, but rather that everything past exists.

13 Finally, it is worth adding that the most discussed problem of presentism, the grounding problem, is also naturally resolved given the pluralist framework just outlined. Having at this stage the needed background, we can immediately see the solution: given that past existence (as expressed by \exists_p) is a genuine kind of existence, truths about the past can be said to be appropriately grounded. (For an elaboration of this, see McDaniel (Forthcoming, Sec. 3.5, 80–4).)

distinction, and explicitly restricting it to the concrete realm. Otherwise, under ontological pluralism we can naturally accommodate any theory of abstract objects in a presentist worldview.

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