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The Growing Block, the Epistemic Objection, and Zombie Parrots

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In their marvelous new book, Fabrice Correia and Sven Rosenkranz offer an extensive development and defense of what they call The Growing Block Theory (or GBT, as they refer to it). In this piece I want to start by considering one of the main objections to their view that Correia and Rosenkranz discuss, namely, the Epistemic Objection. This will lead to a question about whether Correia and Rosenkranz's view is a Four-Dimensionalist version of GBT or a Three-Dimensionalist version of the theory. It will be seen that there are three possible ways they might respond to this question, and I will raise a worry (or two) for each way. Then I will end with some free advice about how I think Correia and Rosenkranz ought to respond to my question.

Correia and Rosenkranz quote the following passage from Trenton Merricks on the Epistemic Objection to GBT.

Nero is not (any longer) on the growing edge of being. So what are we to make of Nero's thoughts like 'I am sitting here at the present time'? The most obvious reply is that Nero is – and forevermore will be – thinking false thoughts, falsely thinking that he sits at the growing edge of being. [...] [But now] consider that you think 'I am reading this paper at the present time'. If 'the present time' refers to the growing edge of being, you ought to conclude that your own thought is false. After all, given [the theory of the] growing block, once you have a thought, you continue to have that thought forever. That thought is on the growing edge of being for just

the briefest moment and is thereafter and forever not on the growing edge. As a result, the probability that your thought is on the growing edge is vanishingly small. Thus if Nero is wrong, then so – almost certainly – are you. That is an unwelcome result. [Merricks 2006: 105 (as quoted by Correia and Rosenkranz on p. 87)]

One way to think of this objection is by analogy with skepticism about the external world. From the inside, the way things seem to a normal brain and the way things seem to a brain in a vat are the same. But the brain in a vat knows nothing about the external world; so how can it be that the normal brain knows anything about the external world?¹ Similarly, Nero, way back

¹ For the record, I try to solve this problem in Markosian 2014. The short version of my proposed solution is that you are justified in believing that you are not a brain in a vat because that is what your evidence supports. (It seems to you that you have hands, and a body, etc.) And since the other conditions for knowledge are also satisfied in the case of your belief that you are not a brain in a vat, you do in fact know this proposition.

It might be wondered whether a similar move could work in the present case. Perhaps we can say that any conscious experience automatically includes the impression that that experience is present, and so counts as evidence for the proposition that the subject of that experience is present. Then it would follow that every subject of any conscious experience – including you now and Nero way back when – is justified in believing themselves to be present.

There is good news and bad news about whether this move will work in the current context. The good news is that if the move works in the brain-in-a-vat case, then it might well work for any conscious agent who is not a proponent of GBT. For such a conscious agent will be justified in believing themselves to be present, which means that they should continue to believe that. (And the few lucky ones who are present will even know the relevant proposition!)

The bad news is that the move will not work for people who (justifiedly) endorse GBT, like Correia and Rosenkranz. For anyone who (justifiedly) endorses GBT will have reason to believe that they are relevantly like a brain in a universe where the overwhelming majority of brains are brains in vats. For such a person, the evidence that the majority of brains are brains in vats will defeat whatever evidence they have (i.e., its seeming to them that they are a brain in a body) for the belief that they are a brain in a body. And so those brains – even the ones that really are in bodies – will not be justified in believing that they are brains in bodies. Likewise, for a Growing Block Theorist, whatever evidence they have (i.e., its seeming to them that their experiences are present) for the belief that they are

in the past, believes that he is present, just as you, right now, believe that you are present. But Nero is not present, and so what he believes is false. So how can you be sure that you – who are after all just like Nero on the inside – now know that you are present?

Correia and Rosenkranz devote a whole chapter of their book (Chapter 6) to this objection. Their reply begins with the claim that the objection depends on two presumptions. *Presumption A* is that subjects in the past wrongly believe that they are on the edge of reality (i.e., that they are present). *Presumption B* is that subjects in the past are now wrong in having believed in the past that they are on the edge of reality. But both presumptions are false, according to Correia and Rosenkranz. Presumption A is false, according to them, because it involves attributing to the Growing Block Theorist “the hopeless thought that nothing ever loses any of its properties, tensed or untensed, by becoming past” (Correia and Rosenkranz, p. 88). They go on to say,

If the past is as real as the present, and if this is now taken to imply that what went on at an earlier time is still going on, then indeed for all we can tell by inspecting what is going on around us, the edge of reality might lie in the future. For, we are then in no better epistemic position than someone located in the remote past who, on this uncharitable rendition of the view, might still be contemplating whether they are on the edge of reality, perceiving events that are still unfolding around them, although, alas and unbeknownst to them, reality has long since grown beyond any such event – a fact to which our own existence testifies. The image of the block would accordingly be that of a multi-storey building, with lower floors corresponding to the more distant past, where what happens on each floor is still happening, even if it is not happening on the last floor. But this evidently misconstrues

present will be defeated by their evidence that the vast majority of conscious agents are located in the past section of the block. So, somewhat ironically, for Growing Block Theorists, but only for Growing Block Theorists, this response to the Epistemic Objection succumbs to the agony of defeat.

the tensed metaphysics that GBT is meant to articulate: to say, on the one hand, that the past is real (exists), and hence that so are (do) the events that once occurred, is not to say, on the other, that past events are still occurring. [Correia and Rosenkranz, p. 89]

Correia and Rosenkranz then go on to say,

Accordingly, presumption A fails: according to GBT, even if Nero, who once believed [himself] to be on the edge of becoming, still exists at a time at which he no longer sits on the edge of becoming, it by no means follows that he is still believing [himself], wrongly, to sit on the edge of becoming. The most that can be said about Nero in this respect is that he once believed [himself] to be on the edge of becoming, at which time he believed truly. [Correia and Rosenkranz, p. 90]

This response amounts to the move that is sometimes called “taking tense seriously.” It’s not true now that Nero believes he is present. What’s true now is that it was the case that Nero believes he is present, and when he believed it, it was true. Now it’s not true, and he no longer believes it. All good.

Meanwhile, Correia and Rosenkranz argue that presumption B is also false, for relevantly similar reasons. (I will not go into the details here, but the argument occurs on pp. 92-94.)

In reading this chapter, I could not escape the feeling that the critics and Correia and Rosenkranz are talking past each other. The critics, it seems to me, are thinking of GBT as a version of the metaphysical doctrine known as Four-Dimensionalism. The block that is growing, on this picture, consists of the fusion of all existing temporal parts of the universe. As time passes, new temporal parts are added to the front end. Or, to rotate the image 90 degrees, the critics are thinking of the growing block exactly as Correia and Rosenkranz describe it (in a passage on p. 89 that is quoted above) in what they take to be a caricature of the view: as a growing building, with the edge of reality at any given time consisting of the top floor, and the lower floors all continuing to exist even as new floors are added to the top.

To be more precise, here is what I mean by Four-Dimensionalism and its rival, Three-Dimensionalism.²

Four-Dimensionalism: Any physical object that persists through time does so in virtue of having a temporal part at each moment at which it is located.

Three-Dimensionalism: Any physical object that persists through time does so in virtue of being wholly present at each moment at which it is located

Four-Dimensionalist GBT (hereafter 4D GBT), then, is a dynamic version of Four-Dimensionalism according to which the universe consists, at any given time, of a great many past temporal parts, as well as the current temporal part, but nothing more. This view respects the core elements of Correia and Rosenkranz's GBT, which are the two axioms that they call (P1) and (P2), and which can be paraphrased as follows.³

(P1) Nothing ever goes out of existence.

(P2) Each new time comes into existence at itself.

Three-Dimensionalist GBT (hereafter 3D GBT), on the other hand, is a dynamic version of Three-Dimensionalism according to which all of reality consists, at any given time, of a great many past objects and a great many present objects (all of which persist through time by being wholly present at different times, rather than in virtue of having temporal parts at the different times), but nothing more. This view also respects the two axioms of Correia and Rosenkranz's GBT, (P1) and (P2).

All of this is relevant because of what it is to have an intrinsic property at a time, according to Four-Dimensionalism. To have intrinsic property *F* at time *t* (on that view) is to have a temporal part at *t* that is *F*.⁴ And now we can see more clearly what the problem is that Merricks and the others

² These formulations of Four-Dimensionalism and Three-Dimensionalism are based on the formulations given in Markosian 2020. On the definitions of 'temporal part' and 'wholly present', see Sider 2001 and Markosian 1994.

³ See Correia and Rosenkranz, pp. 43-44.

⁴ Lewis 1986: 202-204. See also Eddon 2010.

were worried about. We want it to be true that Nero at some time in the past believed himself to be present. But on 4D GBT, what would make it true now that Nero had that belief is the fact that he has a temporal part, located in the past, that believes that it is present. So let there be such a temporal part of Nero, located in the distant past. On standard versions of Four-Dimensionalism, this is not a problem, because standard versions of Four-Dimensionalism are eternalist, static theories, according to which what exists does not change over time, there is no such thing as presentness, and there is accordingly no inexorable process of times coming to be present and then receding forever further and further into the past.⁵ But GBT is a dynamic theory, according to which what exists (and what is present, i.e., what constitutes the leading edge of reality) keeps changing. It follows that on the Four-Dimensionalist version of GBT, the earlier temporal part of Nero that believes itself to be present still exists, but is no longer present. And likewise with all past temporal parts of conscious beings who were once correctly thinking that they were present, but no longer are present. The worry, then, is that our current temporal parts could very well fit the description in the previous sentence.

Meanwhile, if Correia and Rosenkranz's version of GBT is a Three-Dimensionalist version, then the point just made in the previous paragraph (about Nero's having believed himself to be present iff he has an earlier temporal part that believes itself to be present) does not apply to their view. And in that case, their response to the Epistemic Objection (which is to insist that we must take tense seriously, so that we cannot say that Nero ever falsely believed himself to be present) seems to effectively defuse the objection.

So I have a question for Correia and Rosenkranz: *Do you mean for your GBT to be the Four-Dimensionalist version of GBT or the Three-Dimensionalist version?* I can think of three possible responses to this question, and for each one, there is some reason to think that it is the response Correia and Rosenkranz would in fact give.

⁵ On static and dynamic theories of time see Markosian 2020.

The first response that Correia and Rosenkranz could give to my question is that their theory is 4D GBT. Here are several reasons to think that this will be their preferred response.

(1) They call their view a Growing Block Theory. The word 'block' suggests a four-dimensional universe, in which physical objects occupy a unified, four-dimensional manifold that is appropriately called "spacetime."

(2) Most philosophers who talk about "The Growing Block Theory," as far as I can tell, have in mind the Four-Dimensionalist version of the view. In particular, I think this is certainly true of all of those who raise the Epistemic Objection to GBT, since, as the above considerations suggest, the objection is most charitably interpreted as an objection to 4D GBT rather than to 3D GBT.

(3) Correia and Rosenkranz talk, throughout the book, about the leading edge of reality, and this suggests a growing, four-dimensional block in a four-dimensional manifold.

(4) On p. 94 Correia and Rosenkranz write about looking back on "past layers of the block, whose existence the theory itself confirms." This also sounds like Four-Dimensionalist talk.

(5) Correia and Rosenkranz quote Theodore Sider, talking about a version of the Epistemic Objection to the Growing Block Theory (which theory he attributes to Broad), and Sider several times refers to parts of a growing, four-dimensional reality, using phrases like "the 1935 slice of reality." Correia and Rosenkranz offer an objection to what Sider is saying that has to do with the semantics for expressions like 'the edge of becoming' when they are embedded within the scope of an operator like 'Back in 1935'. But Correia and Rosenkranz notably do not, in this context, complain that a phrase like "the 1935 slice of reality" suggests a Four-Dimensionalist picture of the universe. If you are well aware that your theory is not a Four-Dimensionalist view, it would be very natural to

resist such talk when it explicitly comes up. (Similar remarks apply to several other passages in Chapter 6, where Correia and Rosenkranz quote a critic of GBT who explicitly uses the language of temporal parts and temporal slices of reality, but offer no objection to such language, instead choosing to object on semantic grounds.)

(6) More generally, in responding to the Epistemic Objection (which after all takes up a whole chapter of their book), Correia and Rosenkranz never say anything like, “but this presupposes a Four-Dimensionalist version of GBT, and our version of the theory is not a Four-Dimensionalist version,” even though this would be an extremely helpful thing to say in this context, if they knew that their GBT is not 4D GBT.

The second response to my question that Correia and Rosenkranz might offer is that their theory is 3D GBT. Here are two reasons to think that this will in fact be their preferred response.

(1) The fundamental ideology that they talk about in Section 4.3 makes no mention of temporal parts. And in fact the phrase ‘temporal part’ never occurs in the book. (There is one occurrence of ‘spatiotemporal parts’, on p.151, but it is not part of the discussion of the main view defended in the book.)

(2) All of the principles and axioms that they state explicitly seem to be consistent with both 3D GBT and 4D GBT. But the response they give to the Epistemic Objection, as noted above, is most charitably interpreted as a defense of 3D GBT.

And, finally, the third response to my question about whether their theory is 4D GBT or 3D GBT that Correia and Rosenkranz might offer is to explicitly refuse to answer the question, for the simple reason that they do not accept the ideology of temporal parts. That is, they might maintain that the question simply does not arise within the framework of their theory.

There are two reasons why I think Correia and Rosenkranz should not opt for this third response to my question. First, it just feels like a cop out. But second, and more importantly, Sider has shown that the notion of a

temporal part can be characterized using only familiar and well-behaved notions, namely, quantification, times, parthood, and identity, all of which Correia and Rosenkranz are committed to.⁶ So no one is asking them to add anything to their primitive ideology. All participants in the Three-Dimensionalism/Four-Dimensionalism debate are asking Correia and Rosenkranz to do is to understand a notion that can be defined using terms that are in their fundamental vocabulary, and then to entertain a seemingly clear question that we can ask by employing that notion.

I mentioned that there is a worry that arises if Correia and Rosenkranz respond to my question by saying that their theory is 4D GBT. The worry is that then it looks like the Epistemic Objection is much more forceful, and their reply (about taking tense seriously) will no longer seem to resolve the problem. For if they go with 4D GBT, they will be committed to saying, as Four-Dimensionalists do, that to have an intrinsic property (like being conscious, or believing oneself to be present) at a time is to have a temporal part at that time that has the property *simpliciter*. Which means they will have to admit that all the relevant past temporal parts, stretching back through time, really are conscious, and mistakenly think that they are present. (Just as some of those temporal parts of past individuals really are 5 feet tall, and really believe that it is raining around them; while others really are 6 feet tall, and really believe that it is sunny where they are.)

Meanwhile, there are two worries that arise if Correia and Rosenkranz respond to my question by saying that their theory is 3D GBT. The first worry is that, in that case, it is not clear that their view deserves the name “The Growing Block Theory.” For 3D GBT is a growing ontology view, but it does not involve any block, growing or otherwise. I think that calling such a view “The Growing Block Theory” would be contrary to the way most metaphysicians think of what they call “The Growing Block Theory.”

The second worry that arises if Correia and Rosenkranz answer my question by saying that their theory is 3D GBT concerns the objection about zombie parrots that has been raised by Dean Zimmerman and others,⁷ and that is discussed in Section 6.1 of the book. In order to appreciate the

⁶ Sider 2001.

⁷ See Zimmerman 2008: 215–216 and Braddon-Mitchell 2013: 358.

objection, suppose that nothing has temporal parts, but suppose that some long dead parrot, Polly, still exists, i.e., is still in the correct ontology. Then we can ask: What properties does Polly have now? Polly is not alive, and she is not really dead, either. Polly was alive, and then she was dead, and then she decomposed. Now there is no physical object that is Polly – she is not located on the edge of reality, since she is entirely in the past. So she is neither alive nor dead, but she continues to exist (and will do so for all the rest of eternity).

Correia and Rosenkranz talk about this alleged problem on pp. 91-92, but they frame it as a problem about what species the past parrot is currently a member of, and they seem to want to answer this question by saying, “Once a parrot, always a parrot.” So they think there is ample reason to say that a long dead parrot continues to be a parrot, even when it is no longer doing parrot-type things, like metabolizing.

This might sound reasonable at first glance, but I am afraid it does not really solve the problem. For one thing, this solution will not work for various other questions we can ask about Polly, including, “Is Polly now alive or dead?” For surely we do not want to say, “Once alive, always alive.” But more importantly, upon further reflection, we should not even be okay with saying that it is true now that Polly is a parrot. To be a parrot is (among other things) to be an organism that has a certain DNA, and Polly is not now an organism (she was, but she no longer is), and she does not now have any DNA (she did, but she does not now). The problem is that the same semantic commitment (taking tense seriously) that saves 3D GBT from the Epistemic Objection now commits the theory to such things as former parrots that are currently neither alive nor dead, neither conscious nor not-conscious, neither green nor not-green, and neither parrots nor non-parrots. It sounds a little bit scary! And to make matters worse, it sounds like a view that will be committed to the dreaded consequence that there are “bare particulars” – objects that exist, but that have no properties at all. For consider Polly, and consider any typical, present-tensed property, *F* (such as *being alive*, *being dead*, or *being a parrot*). Polly does not now have *F*, and Polly also does not now have *not-F*.

Luckily, there is a response to the zombie parrot problem that is distinct from the one offered by Correia and Rosenkranz, and that does not commit

them to such bare particulars. And it was right in front of their noses all along, since it is very close to the semantic response that they gave to the Epistemic Objection. The response is to admit that Polly does not now have any present-tensed properties at all (how could she? she is not located in the present, on the leading edge of reality!), but to point out that Polly nevertheless has right now many past-tensed properties, including *having been alive*, *having been dead* (at a different time, naturally), and *having been a parrot*. Thus, Polly is no bare particular. For a bare particular has no properties, and Polly has many properties. (It's just that they are all past-tensed, which is of course what one should expect from a past object.)

Although they did not ask for my guidance, I now want to offer some free advice to Correia and Rosenkranz about how to deal with the question I have raised, and the several worries that arise for each possible way of responding to that question. I recommend that Correia and Rosenkranz do not refuse to answer the question of whether their theory is 3D GBT or 4D GBT. Since the question can be asked in terms that are defined using only their own primitive vocabulary, I think that they should accept the legitimacy of the question.

I also recommend that Correia and Rosenkranz not answer the question by saying that their theory is 4D GBT. For if they do so, I think they will be in the awkward position of not having a good response to the Epistemic Objection, for the reasons given above. Also, my sense is that accepting that their theory is 4D GBT would not be in the spirit of their entire project. If they had meant their theory to be a Four-Dimensionalist theory, they would have said so.

So I recommend that Correia and Rosenkranz explicitly say that their theory is 3D GBT. (In fact, I suspect that as Correia and Rosenkranz read my contribution to this book symposium, they will find themselves frequently muttering, "No, that is a misinterpretation: our theory was never meant to be 4D GBT.") The main advantage of giving this answer to my question, as I see it, is that doing so will allow them to use the kind of semantic response that they explicitly make to the Epistemic Objection. For as I have suggested above, that response is effective as a defense of 3D GBT, but not as a defense of 4D GBT.

I can think of three disadvantages of answering my question by saying that their theory is 3D GBT. The first one is that Correia and Rosenkranz will have to bite a bullet and admit that “Growing Block Theory” is a bit of a misnomer for their view. It would perhaps be better to rebrand their theory as a Growing Ontology View. (But on the bright side, I think “GOV” has a nice ring to it.)

The second disadvantage of saying that their theory is 3D GBT is that if they do so, then they should probably also come clean and state explicitly that the kind of Growing Block Theory they are defending is different in an important way from pretty much all of the theories going by that name that are discussed in the literature, and from what metaphysicians normally think of when they hear the phrase “Growing Block Theory.” But once this is stated explicitly, I think it can be turned into a feature of their view rather than a bug. Their view captures one important aspect of popular Growing Block Theories (the idea that the correct ontology is always increasing and never decreases), while (a) avoiding a commitment to the controversial doctrine of Four-Dimensionalism and also (b) avoiding a major pitfall that affects all Four-Dimensionalist versions of GBT (namely, the Epistemic Objection). They would thus achieve the multiple virtues of (i) occupying a unique place within the literature, (ii) not being committed to a controversial metaphysical doctrine, and (iii) immunity to a certain otherwise fatal objection. So in the end I think that this potential disadvantage can be turned into a win-win-win.

As for zombie parrots, I think Correia and Rosenkranz will also have to bite a bullet on that score. For they will have to admit that there really do exist such things as former parrots that are neither alive nor dead (nor even current parrots!). But they can at the same time point out that such objects do nevertheless have many properties, such as *having been alive*, *having been dead*, and *having been a parrot*. Thus they are not bare particulars that lack any properties at all.⁸

⁸ I am grateful to two anonymous readers for providing comments on an earlier version of this piece.

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