Don't stop believing.
Fragmentalism and the problem of tensed belief explosion

Roberto Loss

robertoloss.com

Abstract. Giovanni Merlo has argued that a currently popular way to interpret Kit Fine's fragmentalism about tensed facts (which he calls 'unstructured fragmentalism') is threatened by the problem of 'tensed belief explosion'. I argue that such an explosion of belief poses no problem to unstructured fragmentalists.

1. Introduction

According to tense realism, reality is constituted, at least in part, by *tensed facts*, like the fact that Socrates *is* sitting, the fact that Fido *was* barking, or the fact that there *will be* outposts on Mars. Tensed facts look at reality from a certain temporal perspective, so to speak. For this reason, it may seem natural for tense realists to take reality to be 'oriented' (Fine 2005: 271) towards one specific time, thought of as the temporal perspective that is somehow metaphysically privileged. The resulting metaphysical picture is what Fine (2005) calls 'standard tense realism'. As Fine himself argues, however, tense realists are not committed to this form of 'temporal anti-egalitarianism' (as we may call it)[1] as they can instead embrace some 'non-standard' form of tense realism and claim that, although tensed facts exist, no time enjoys any kind of special metaphysical status.

The kind of 'non-standard' tense realism that has so far attracted the most attention in the literature is the view Fine calls 'fragmentalism'.[2] According to it, tensed facts exist and constitute reality absolutely (that is, not merely relative to a temporal standpoint). However, reality is not oriented towards any time in particular, and is thus populated by incompatible facts. Suppose, for instance, that Socrates is sitting at t_1 and standing at t_2. For fragmentalists this means that although the fact that Socrates is sitting and the fact that Socrates is standing are incompatible facts, they both get to constitute reality (so that neither t_1 nor t_2 enjoys any kind of special metaphysical status). However, this doesn't mean that fragmentalists accept that reality is inconsistent. Although incompatible facts are allowed to constitute reality, they never get to *obtain together*, as they can constitute reality only by belonging to different 'fragments of reality' that do not form a coherent whole.[3]

Merlo (2022) has argued that the main way in which fragmentalism seems to have been so far interpreted in the literature (which he labels 'unstructured fragmentalism') is threatened by the problem of 'tensed belief explosion'. In a nutshell: if every tensed fact that ever obtains also obtains *simpliciter* (as unstructured fragmentalists claim)[4] then, at any time, any subject that is provided with the sufficient amount of information as to which facts obtain *simpliciter* is forced to believe in incompatible facts. In turn, this seems to entail not only that the subject in question

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[1] For a discussion of temporal egalitarianism in this sense, see Merlo (2013).

[2] The other form of non-standard tense realism is the one Fine (2005: 278) calls 'external relativism'.

[3] See, among others, Iaquinto (2019, 2020), Iaquinto and Torrengo (2022), Iaquinto and Calosi (2021), Lipman (2015, 2016, 2018), Loss (2017), Simon (2018), Torrengo and Iaquinto (2019), and Zhan (2021).

[4] As Merlo (2022: 5) rightly stresses, some unstructured fragmentalists (like Lipman 2015) endorse only a qualified version of this claim which is nevertheless sufficient to generate the problem in question.

is irrational but also that they are unable to act in different ways at different times on the basis of what they believe.

The aim of this paper is to argue that unstructured fragmentalists are actually left unscathed by Merlo's explosion of tensed beliefs.

2. Fragmentalism

Qua fragmentalists, unstructured fragmentalists claim that incompatible facts can obtain, provided that they fail to co-obtain. There is disagreement among unstructured fragmentalists as to how this notion of co-obtainment should be interpreted. Merlo focuses on two main versions of unstructured fragmentalism, defended by Lipman (2015, 2016, 2018) and myself (Loss 2017: 224-230), respectively (see also Torrengo and Iaquinto 2019, and Iaquinto and Torrengo 2022). For simplicity's sake in what follows I will adopt my own preferred version of fragmentalism, although what I will say also applies, *mutatis mutandis*, to Lipman's.

According to the kind of fragmentalism I defend in Loss (2017: 224-230), the notion of co-obtainment is expressed by means of the notion of conjunction: the fact *that p* and the fact *that q* co-obtain just in case the fact *that p and q* obtains. Therefore, in this case the fact that reality is fragmented corresponds to the failure of the familiar rule of adjunction for conjunction:

$$[\text{Adjunction}] \quad \phi, \psi \vdash \phi \wedge \psi$$

This means that conjunctive facts obtain *simpliciter* just in case the facts corresponding to the two conjuncts obtain in the same fragment of reality. This allows negative facts to obtain *simpliciter* whenever there is some fragment at which they obtain (regardless of whether the corresponding positive fact also obtains at some other fragment) without giving rise to any contradiction (that is, to any true conjunction of the form '*p* and not-*p*'). The characterizing feature of this version of fragmentalism is the principle Merlo (2022: 5) labels 'U-Neutrality$_{\text{Loss}}$' (where 'S' is the temporal operator 'it is sometimes the case that'):

$$[\text{U-Neutrality}_{\text{Loss}}] \quad (\text{For any } p) \quad Sp \rightarrow p$$

In other words, this kind of unstructured fragmentalists express the temporally egalitarian nature of their theory by taking the operator 'it is sometimes the case that' to be *factive*: since everything that is sometimes the case is the case *simpliciter*, reality contains what is the case at every time, so that no time is privileged (Loss 2017: 214).

3. Tensed belief explosion

Merlo presents the problem of tensed belief explosion by imagining a person, Tom, who is blindfolded and is told things about the world by an omniscient demon. As he himself acknowledges, one way to address the problem (which he argues to be unsuccessful; Merlo 2022: 14-15) is to take Tom *not* to be blindfolded and thus to be able to perceptually 'anchor' himself to a 'specific spatiotemporal location' (Merlo 2022: 14). Since my (dis)solution of the problem of tensed belief explosion relies on the possibility of a similar kind of anchoring, I will directly formulate the problem by supposing that Tom is *not* blindfolded.

Consider, then, the following scenario: 'Tom, an antique collector, owns two beautiful vases, a red vase and a blue vase. At t_1, the red vase is safe, but someone is throwing a stone at

the blue vase. At t_2, the blue vase is safe, but someone is throwing a stone at the red vase' (Merlo 2022: 10). At t_2, Tom *sees* the stone flying towards the red vase. He thereby forms the belief that the red vase is in danger. Therefore, Tom believes at t_2 that the *red* vase is in danger. However, at t_2 Tom is also 'wearing a headset through which he can communicate with an omniscient demon' (*Ibidem*) who provides him with accurate descriptions of parts of reality. At t_2 the demon tells Tom that the blue vase is in danger. Tom thereby comes to believe that the blue vase is in danger. Therefore, Tom also believes at t_2 that the *blue* vase is in danger.

In this scenario, Tom believes at t_2 both that the red vase is in danger and that the blue vase is in danger. He clearly cares a lot about his vases. Yet, what should he do at t_2? Should he try to jump towards the red vase and intercept the stone before it hits the vase, or should he instead jump towards the blue vase and try to save it? It seems difficult to say, given that at t_2 Tom believes that both vases are in danger (call this the '*action problem*').

Furthermore, we can imagine that at t_2 Tom also comes to believe that the red vase is *not* in danger (since the red vase is not in danger *at t_1*) and also that the blue vase is *not* in danger (since the blue vase is not in danger *at t_2*). However, this means that at t_2 Tom is forced to hold contradictory beliefs. Yet, we are supposing that Tom is a rational agent. But isn't a rational agent supposed not to hold 'incoherent tensed beliefs'? (Merlo 2022: 12; call this the '*rationality problem*').

4. A harmless explosion of beliefs I: the action problem

Within a standard tense realist framework reality is thought of as being oriented towards one particular time, namely, the present. Therefore, the fact that a certain tensed proposition is true says something about the present time, which is indeed the time that currently 'exhausts reality', so to speak.[5] Instead, according to unstructured fragmentalism, reality is *not* oriented towards any time in particular, and thus, for every time t, reality is constituted by what is the case at t without being exhausted by it. Therefore, if unstructured fragmentalism is assumed, the simple fact that a certain tensed proposition is true cannot tell us anything about any *time* in particular. The truth of a certain tensed proposition can only tell us something about *reality* as a whole, so to speak, and namely, the fact that that it is at least partly constituted by the fact corresponding to the true proposition in question.

Imagine, then, that *you* are Tom. You are looking, terrified, at the stone flying across the room towards the rare and precious *red* vase. In that very moment, you hear the all too familiar voice of the omniscient demon whispering to you: 'The blue vase is in danger'. If you are an unstructured fragmentalist, you know that, although what the demon says must be true, it doesn't mean that the blue vase is in danger *right now*—that is, it doesn't mean that the fact that the blue vase is in danger *co-obtains* with your having the visual experience as of a stone flying across the room towards the *red* vase. Therefore, the mellifluous voice of the demon doesn't give you any reason to try to prevent the stone from hitting the *blue* vase. At the same time, you are currently having the visual experience as of a stone flying across the room towards the red vase. Contrary to the testimony of the demon, your visual experience does give you some good reason to prevent the stone from hitting the red vase. As a matter of fact, not only is your visual experience typically veridical but, whenever it is, the fact it represents as obtaining usually co-obtains with your having

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[5] To say that a time t 'exhausts reality' in this sense is to say that, for every p, p is the case *simpliciter* if, and only if, p is the case *at t*.

the visual experience in question. Therefore, in this case, your having the experience as of a stone flying towards the red vase seems to be sufficient to make you jump towards the red vase.[6]

A similar line of reasoning holds if we look at this scenario from a third-person perspective (see Merlo 2022: 15). At t_1, Tom sees that the blue vase in danger. At t_2, Tom sees that the red vase is in danger. At t_1, the demon tells Tom that the *red* vase is in danger. At t_2 the demon tells Tom that the *blue* vase is in danger. Why does Tom jump towards the red vase *at t_2* and not at t_1? Because he *sees at t_2* that the *red vase* is in danger, and the fact that Tom sees *at t_2* that the red vase is in danger provides him with some good reason to jump towards the red vase *right then*. True, thanks to the omniscient demon, Tom also knows *at t_1* that the red vase is in danger. However, the testimony of the demon *at t_1* doesn't give Tom (who is a committed structured fragmentalist) any clue as to *which time* is such that the red vase is in danger *at it* (that is, as to which facts *co-obtain* with the fact that the red vase is in danger). At the very best, what Tom can infer from the testimony of the demon at t_1 is that there is *some time t* such that the red vase is in danger *at t*.

Notice that the situation doesn't change even if we suppose that Tom is *always omniscient* and, thus, that he always holds the same set of beliefs at every time. Even in this case, in fact, we have that his *experience varies* from time to time always 'anchor[ing him to a] specific spatiotemporal location' (Merlo 2022: 14) and allowing him to act differently at different times. To put it somewhat impressionistically, in this case Tom's experience can be seen as acting with respect to his beliefs like the 'spotlight of the present' acts with respect to times for 'moving-spotlight theorists',[7] and namely, as if 'moving' around the set of his beliefs 'illuminating' at every time a different proper subset of them and thereby making them relevant for his action. For instance, in this case Tom believes *at every time* that his experience as of a stone flying towards the red vase co-obtains with the fact that the red vase is in danger. However, this fact only co-obtains *at t_2* with the fact that he's having the *experience* as of a stone flying across the room towards the red vase.[8]

We can make more explicit which of the relevant facts co-obtain at t_1 and at t_2, respectively, as follows ('**B**(…)' stands for 'Tom believes that', 'CO-OB[…,…]' for 'the fact that … co-obtains with the fact that…',[9] '*Esp*(R)' for 'Tom has the experience as of a stone flying towards the red vase', 'RED' for 'the red vase is in danger', and '*Jump*(R)' for 'Tom jumps towards the red vase'):

t_1: **B**(CO-OB[*Esp*(R),RED]), ~*Esp*(R), ~RED, ~*Jump*(R)

t_2: **B**(CO-OB[*Esp*(R), RED]), *Esp*(R), RED, *Jump*(R)

Time t_1 and time t_2 'overlap' on the fact that Tom believes that his experience of a stone flying towards the red vase co-obtains with the fact that the red vase is in danger.[10] However, while t_2

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[6] Tom's visual experience is veridical because it was caused by the corresponding event. The issue about how fragmentalists can account for causation is beyond the scope of this paper. Here I simply assume (as Merlo also appears to implicitly do) that fragmentalists can offer a tenable theory of causation. For a recent proposal see Iaquinto and Torrengo (2022: chapter 3).

[7] On the moving-spotlight theory see, for instance, Skow (2015: chapter 4).

[8] Here and in what follows I speak of 'co-obtaining at a time' only for readability's sake. Two facts 'co-obtain at a time *t*' in this sense just in case (i) they co-obtain and (ii) they both belong to the set of co-obtaining facts in which time *t* consists (see also section 5 below).

[9] I'm using here 'CO-OB' instead of conjunction just for clarity's sake.

[10] If times are understood mereologically (see footnote 10) then t_1 and t_2 literally overlap.

contains the fact that Tom has the relevant experience, t_1 lacks this fact. It is thus in virtue of the fact that *both* the fact **B**(CO-OB[Esp(R), RED]) *and* the fact Esp(R) obtain at t_2 that Tom jumps towards the red vase at t_2 (so that the corresponding fact also obtains at t_2). Instead, the mere obtaining of the fact **B**(CO-OB[Esp(R), RED]) is *in*sufficient to make Tom act, since within a fragmentalist setting one can truly believe that that Esp(R) and RED co-obtain even if neither fact co-obtains with such belief. In other words, it is Tom's having the experience in question that, coupled with his belief that what he is experiencing co-obtains with his experience, makes him act accordingly.

The idea that (at least assuming what Egan and Titlebaum (2022) call the 'Simple Picture')[11] (i) beliefs may sometimes be insufficient for action and that (ii) one's perceptual situation may in turn be necessary isn't new in the literature. It follows, for instance, from Lewis's (1979) account of Perry's (1979) famous case of the amnesiac Rudolf Lingens (who is lost in the Stanford's library, doesn't know who or where he is, but can read any book in the library):

> Book learning will help, no doubt, but only because Lingens has more than book learning. He is in a position to self-ascribe the property of *being in a certain perceptual situation*. This is a property that does not correspond to any proposition […]. Then his problem is solved. […] He relied on his *perceptual* belief, and that was already nonpropositional. […] That is how Lingens can find out who and where in the world he is. (Lewis 1979: 520; italics mine)

To better appreciate this point, consider the modified scenario in which an omniscient demon tells Lingens that someone is about to shoot Rudolf Lingens and that Rudolf Lingens is standing in front of Professor John Perry. Lingens want to save the person that is about to be shot. However, if he is Lingens than the best thing to do is to duck. Instead, if he is Perry, the best thing to do is to pull the person in front of him by grabbing him by the jacket. If we apply the same considerations that Lewis (1979) applies to Perry's original case, we should then say the fact Lingens eventually ducks and dodges the bullet crucially depends on the fact that he can *perceptually anchor* himself to that particular situation. Similarly, it is Tom's experience of the ball flying towards the red vase that anchors him to the relevant situation and gives him the motivation to jump towards the red vase.

Therefore, although it is indeed true that, if provided with the relevant information, Tom cannot act differently at different times solely on the basis of what he believes, he can nevertheless act differently on the basis of what he believes *and* what he experiences.

5. A harmless explosion of beliefs II: the rationality problem

As for the rationality problem, consider first that (as we already saw in the previous section) it appears natural for fragmentalists of all kinds to take times to be fragments of reality, where a fragment of reality can be thought of as a maximal set of co-obtaining facts.[12] This means that the fact, say, that Socrates is sitting at t_1 boils down for fragmentalists to the fact that a certain fragment of reality (namely, what we call 'time t_1') is such that the fact that Socrates is sitting

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[11] 'The Simple Picture: 1. Belief is a binary relation between believers and objects of belief. 2. The objects of belief are traditional propositions.' (Egan and Titlebaum 2022: §2.1).

[12] Alternatively, one could take fragments of reality to be maximal mereological fusions of co-obtaining facts (for a similar idea see Loss 2017: 215-18).

belongs to it. This also holds for facts about belief. For instance, the fact that Socrates believes at t_1 that Alcibiades is dancing boils down to the fact that a certain fragment of reality (namely, time t_1) is such that the fact *that Socrates believes that Alcibiades is dancing* belongs to it.

We have, thus, that among the facts constituting a certain time *t* there can be the fact that Tom believes a certain proposition *p*, like the proposition that the blue vase in danger. However, in order for Tom to believe that *p* is true *at t* it is not sufficient that the fact *that Tom believes that p* be one of the co-obtaining facts that are part of time *t*, since given fragmentalism the fact that Tom believes at *t* that *p* just means that Tom believes at *t* something about *reality* in the sense specified above (section 4). Therefore, the rationality problem is defused because the requirement that a subject shouldn't hold contradictory beliefs is *too strong* in the case of fragmentalism.

Within a standard tense-realist setting what is the case is the case at the present time. Therefore, in order for both *p* and *not-p* to be true, both the fact *that p* and the fact *that not-p* ought to obtain at the present time, which would entail that the present time is, in this sense, 'metaphysically inconsistent', as we might say. Instead, unstructured fragmentalists don't take the existence of dialetheias (that is, of sentences *p* such that both *p* and *not-p* are true) to entail that contradictions (that is conjunctions of the form '*p* and *not-p*') are true and, thus, that reality is, in this sense, inconsistent. The fact that both *p* and *not-p* are true simply means for fragmentalists that there is a (metaphysically consistent) fragment at which *p* is the case and a different (metaphysically consistent) fragment at which *not-p* is the case. In turn, this entails that there is some time *t* at which it is true that *p*, and that there is also some different time *t** at which it is true that *not-p*. According to fragmentalists, in order for a contradiction (that is a proposition of the form *p and not-p*) to be true, there would have to be some proposition *p* such that both *p* and *not-p* are true with respect to the *same* fragment. However, fragmentalists assume precisely that this is not the case and that every fragment is 'metaphysically consistent' in this sense.

While in a standard setting it may indeed seem irrational to believe both *that Socrates is sitting* and *that Socrates is not sitting*,[13] there appears to be nothing irrational for unstructured fragmentalists in holding both beliefs. Not only it is part and parcel of unstructured fragmentalism that reality can be constituted by incompatible facts, but, in general, by believing both that *p* and that *q* an unstructured fragmentalist just believes that the two corresponding facts constitute reality, which is compatible with the possibility that the two corresponding facts obtain at *different* times (and are thus part of different and perfectly consistent fragments of reality).

We can thus conclude that—*pace* Merlo (2022)—there seems to be no reason why unstructured fragmentalists should stop believing.[14]

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[13] Notice that neither times nor fragments are part of the content of the proposition *that Socrates is sitting*. The proposition *that Socrates is sitting* is true just in case some fragment is such that Socrates is sitting at it (alternatively: just in case some fragment contains the fact that Socrates is sitting). However, this proposition must not be confused with the proposition *that, at some fragment, Socrates is sitting*.

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