A defense of causalist continuism

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Ever since the discovery that the brain regions that support episodic memory greatly overlap with those of episodic imagination (including counterfactual imagination and episodic future thinking) (Schacter & Addis, 2007), philosophers have been discussing whether these mental processes belong to the same kind. This debate, now known as (dis)continuism, is split between discontinuists, who endorse the view that memory and imagination are distinct mental processes, and continuists, who argue that memory and imagination are fundamentally the same.

Traditionally, philosophers consider the (dis)continuism problem as ultimately depending on the causality question - i.e., whether episodic remembering requires a causal connection to the past event (Perrin & Michaelian, 2017). In this framework, if memory is a simulation process (as claimed by simulationism) and does not require a causal connection, then it is sufficiently similar to imagination and, thus, continuism follows. On the other hand, if a causal connection is necessary for memory (as defended by causalism), then there are fundamental differences between memory and imagination and, thus, discontinuism follows.

The close relation between (dis)continuism and the causality question has been recently criticized, for it might be conflating two distinct, but related, issues (Robins, 2020; SantAnna, 2021). Following similar lines, this paper will argue that such entanglement is due to a failure of clearly delineating issues of *explanation* and *classification*. By distinguishing these matters more explicitly, I conclude that continuism is the better alternative for classification purposes, while maintaining that causalism is still necessary for explaining how memory works.

Although classification and explanation are certainly related epistemic practices, they are logically distinct. Classifications are concerned with organizing entities under a category based on relevant and common properties. Meanwhile, explanations can be roughly characterized as descriptions of interactions that are responsible for a given phenomenon. In this sense, while explanations require a reference to the causal structure of the world, classifications may not do so.

To illustrate how classification and explanation are distinct, consider how there are multiple ways to organize different kinds of birds. We may organize them by size, natural habitat, or any other parameter. However, classifying birds into distinct categories is not necessarily the same as explaining why they have the properties that

they do. Explanations require a reference to the causal structure of the world, as a way to delineate why objects are the way they are.

When classifications map over relevant causal differences between objects, they are called natural kinds. (Dis)continuists often refer to natural kinds as a way to frame the (dis)continuism problem - i.e., whether memory and imagination belong to the same natural kind (see, e.g., Michaelian (2016), Robins (2020), and Werning (2020)). Despite being a controversial topic, it is generally agreed that natural kinds (or any classification that suits our explanatory purposes) should meet three minimal criteria (Boyd, 1991; Craver, 2009):

1. They should range over natural or empirical properties;
2. These properties should be regular in an appropriate way;
3. The regularity of such properties should be able to support inferences and explanations about members of that kind.

As such, any property (or mechanism) that supports a natural kind is adequate for explanations, since it meets criterion (3). However, not every explanatory property is sufficient to ground a natural kind, since fulfilling criterion (3) does not entail that criteria (1) and (2) are also fulfilled.

Given the distinction between classification and explanation, we can analyze the proposed answers to the (dis)continuism problem to check whether they fulfill the previous minimal criteria for natural kindness, or if they are only adequate for explanation but not for classification.

Continuism would amount to the claims that:

1. The (proposed) natural kind of episodic simulation ranges over the neurocognitive process of generating a perceptually detailed representation of a temporally distant event;
2. The properties of this neurocognitive process are regular across tokens of memory and imagination;
3. Such regularity is able to support inferences and explanations about memory and imagination.

In contrast, discontinuism would amount to the claims that:

1. The (proposed) natural kind of episodic memory ranges over a causal connection to the past event;
2. The causal connection regularly occurs with memory in somewhat the same way (while this is not the case for imagination);
3. The regularity of the causal connection is able to support inferences and explanations about memory.

Presented in this way, we can more clearly see the differences between continuism and discontinuism. In particular, claim (2) of discontinuism may be objected. The fact that memory can, and often does, interact with the personal past in a myriad of different ways (see, e.g., Andonovski (2021) and Martin and Deutscher (1966)) makes it so that there isn't enough regularity to support a natural kind. Meanwhile, claims (2) and (3) of continuism seems to be true in light of empirical evidence, given that memory and imagination employ the default mode network in similar ways and are jointly disrupted in cases of episodic amnesia (Addis, 2020; McLelland et al., 2015). As such, not only is continuism able to map relevant and regular properties across memory and imagination, it is also useful for explaining how both these processes work in various conditions.

Still, it may very well be the case that the causal connection is useful, or even essential, for explaining how memory works, thus making claim (3) of discontinuism still true (De Brigard, 2020). However, the claim that episodic memory necessarily involves a causal connection for explanation does not necessarily entail that this characteristic is adequate for classification purposes. Given the lack of regularity of the causal connection, it is not a good parameter to map regularities across memory tokens without overlooking relevant characteristics (such as phenomenological properties, that are similar despite the presence, or absence, of a proper causal connection).

As such, the (dis)continuism problem and the causality question have different epistemic purposes: the first aims at classification, while the second, at explanation. In this context, not only causalism and continuism are compatible with each other, but also complementary to understand how episodic memory works and how it is related to episodic imagination.

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