



# Explanatory Contextualism about Episodic Memory: Towards A Diagnosis of the Causalist-Simulationist Debate

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## Abstract

We argue that the causal theory of memory and the simulation theory of memory are not as straightforwardly incompatible as they are usually taken to be. Following a brief review of the theories, we describe alternative normative and descriptive perspectives on memory, arguing that the causal theory aligns better with the normative perspective and the simulation theory with the descriptive perspective. Taking explanatory contextualism about perception as our starting point, we then develop a form of explanatory contextualism about memory, arguing that, depending on the context in which we find ourselves, either the normative perspective or the descriptive perspective may be appropriate. It follows that, while the causal theory and the simulation theory cannot both be right with respect to a given perspective, and while it is necessary to choose one perspective or the other in a given context, there is an important sense in which we need not choose between causalism and simulationism. We conclude by differentiating our position from and critiquing a related position developed by Craver (2020) and defending our position against objections.

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## 1 Introduction

The relationship of episodic memory to episodic imagination is among the core concerns of the philosophy of memory (Liao & Gendler, 2019; Michaelian et al. 2020; Robins, 2020a). It is uncontroversial that there is considerable similarity between remembering and imagining at the phenomenological level, but it is unclear whether the similarity goes any deeper than this. Is memory, as some have recently claimed, simply a kind of imagination? Or are remembering and imagining, their phenomenological similarity to each other notwithstanding, processes or states of different kinds?

The *causal theory of memory* (CTM) (Martin & Deutscher, 1966; see also Bernecker, 2008, 2010) treats memory as necessarily involving a causal connection to the events that it represents and thus sees remembering and imagining as being sharply distinct. On the causal theorist's view, if a subject's memory system generates a representation of a past event but that representation is not appropriately causally connected to the event in question, then the subject is not, even if he himself takes the representation to be a memory, in fact remembering. No such causal connection, of course, is presupposed by imagining. As the causalist sees things, then, remembering and imagining are states of fundamentally different kinds—memory is not a kind of imagination.<sup>1</sup>

While CTM long enjoyed the status of philosophical common sense, causalism has recently come under attack by partisans of new postcausal theories, i.e., theories that reject the necessity of appropriate causation (Michaelian & Robins, 2018).<sup>2</sup> One of these, the *simulation theory of memory* (STM) (Michaelian 2016b, 2021; cf. Shanton & Goldman, 2010; De Brigard, 2014a), challenges the causalist's stance regarding the necessity of appropriate causation in a head-on manner. On the simulation theorist's view, a subject remembers as long as his memory system operates reliably when it generates his representation of a past event, regardless of whether that representation is causally connected to the event in question. Remembering thus cannot be distinguished from imagining in causal terms. As the simulationist sees things, memory is, indeed, a kind of imagination.

CTM and STM would seem to be straightforwardly incompatible, but we will argue in this paper that things are not as straightforward as they seem. Following a brief review of the theories in Sect. 2, we describe, in Sect. 3, alternative normative and descriptive perspectives on memory, arguing that the causal theory aligns better with the normative perspective and the simulation theory with the descriptive perspective. Taking explanatory contextualism about perception as our starting point, we then develop, in Sect. 4 a form of *explanatory contextualism about*

<sup>1</sup> Both causalists and simulationists typically assume that, if memory requires causal connection, then, since imagination does not require causal connection, memory and imagination are states of fundamentally different kinds (Michaelian et al. 2020), but a compromise view on which memory requires causal connection but is nevertheless a kind of imagination may be coherent (Hopkins 2018).

<sup>2</sup> In addition to the simulation theory, on which we focus here, see the functionalist theory of memory (Fernández 2018, 2019).

*memory*, arguing that, depending on the context in which we find ourselves, either the normative perspective or the descriptive perspective may be appropriate. It follows that, while the causal theory and the simulation theory cannot both be right with respect to a given perspective, and while it is necessary to choose one perspective or the other in a given context, there is an important sense in which we need not choose between causalism and simulationism. We conclude, in Sects. 5 and 6, by differentiating our position from a related position developed by Craver (2020) and defending our position against objections.<sup>3</sup>

## 2 Theories of Memory

We begin with brief reviews of CTM and STM.<sup>4</sup>

### 2.1 The Causal Theory of Memory

In developing CTM, Martin and Deutscher were concerned, first and foremost, to capture the distinction between remembering, on the one hand, and imagining and relearning, on the other hand. They first ask us to consider a case in which a subject experiences an event, entirely forgets it, but then, under the influence of a hypnotist with no knowledge of the event, comes to entertain a representation that happens to be accurate with respect to the event in question. Intuitively speaking, the subject does not remember the event, for the correspondence between his current representation and his earlier experience is purely coincidental. In order to rule out such cases of “coincidental correspondence”, Martin and Deutscher argue that memory presupposes the existence of a *causal connection* between the subject’s current representation and his earlier experience: if there is no such causal connection, they suggest, a subject who seems to remember an event in fact merely imagines it.

Martin and Deutscher next ask us to consider a case in which a subject experiences an event, recounts it to someone else, entirely forgets it, is told about the event by the person to whom he recounted it, entirely forgets being told about it, but then, under the influence of what he has been told, comes to entertain a representation that happens to be accurate with respect to the event in question. Intuitively speaking, the subject does not remember the event, for, while the correspondence between his current representation and his earlier experience is not coincidental, the causal connection between them is, in an important sense, deviant. In order to rule out such deviant causal connections, Martin and Deutscher argue that memory presupposes the existence not just of a causal connection between the subject’s current representation and his earlier experience but, more specifically, of an *appropriate* causal connection, where an appropriate causal connection is one that is sustained by a *memory*

<sup>3</sup> Though we end up defending a position distinct from Craver’s, we would be remiss not to emphasize that this paper was to a great extent inspired by his.

<sup>4</sup> For more detailed reviews, see Debus (2017), Michaelian and Robins (2018).

*trace*: if there is a causal connection but not an appropriate causal connection, they suggest, the subject has merely relearned what he had forgotten.

In short, Martin and Deutscher claim that a subject remembers an event (as opposed to imagining or relearning it) just in case he now represents it (the current representation condition), he experienced it when it occurred (the previous experience condition), and there is an appropriate causal connection between his current representation and his earlier experience (the appropriate causation condition). The appropriate causation condition is intended not only to rule out imagining and relearning but also to ensure that the content of the subject's current representation is suitably related to that of his previous experience. The former need not, in order to be suitably related to the latter, be identical to it: causalists grant that differences between the two that result from the subtraction of content are unproblematic, given that forgetting is a pervasive feature of remembering. But it must not exceed it: causalists generally argue that differences that result from the addition of content are incompatible with remembering, given that such differences indicate that content that was unavailable at the time of the experience has been incorporated into the retrieved representation.<sup>5</sup>

CTM has considerable intuitive appeal, but the idea that memory is characterized by appropriate causation may be threatened by empirical evidence regarding the constructive character of remembering. We will not review this evidence in any detail here,<sup>6</sup> but it seems to suggest that to remember is not to retrieve content stored in a trace originating in experience of the remembered event; it is, rather, to generate a representation of an event that may incorporate content drawn from such a trace but may also incorporate content that was unavailable at the time of the experience. The numerous and systematic errors involved in remembering demonstrate that subjects routinely incorporate content of the latter sort into their memory representations. In particularly dramatic cases, subjects come to recall entire events that they did not experience (Loftus, 1996). In more mundane cases, they come to recall events that they did experience, but their memories include aspects of the events that they did not experience. Boundary extension, for example, which occurs when the subject remembers more of a scene than he originally saw (Intraub et al., 1992), may arise due to the incorporation of self-generated information about the probable layout of the scene into the subject's retrieved memory. Given that content that was not present in experience is regularly incorporated into memory, CTM, as formulated by Martin and Deutscher, would appear to be empirically inadequate.

That a particular instance of remembering involves construction does not imply that its output is inaccurate (Campbell, 2014). That remembering in general involves numerous and systematic errors does not imply that it is unreliable overall (Schacter, 2001). It may thus be possible to modify CTM so as to enable it to accommodate the constructive character of remembering (Michaelian, 2011). If we grant that remembering is compatible with the incorporation of new content, a natural first step would be to add a condition acknowledging that the subject's previous experience need not

<sup>5</sup> For a clear statement of this view, see Bernecker (2008, 2010).

<sup>6</sup> See Schacter (2001) and Addis (2018) for reviews.

provide the full content of the resulting trace and that the trace need not provide the full content of the retrieved representation but requiring that the content of the retrieved representation not go *too far* beyond that of the experience. In order to ensure that, when the retrieved representation includes new content, its accuracy is not due to coincidental correspondence, a natural second step would be to add a condition requiring that the representation be produced by a properly functioning—and hence *reliable*—memory system. The addition of these two conditions goes some way towards reconciling the intuitively appealing causal theory with the empirical evidence that threatens it.<sup>7</sup>

## 2.2 The Simulation Theory of Memory

Simulationists, however, argue that these modifications do not go far enough (Michaelian 2016b, 2021). Consider the first of the two additional conditions described above, which requires that the content of the retrieved representation not go too far beyond that of the previous experience. Noting that the condition does not tell us how much new content can be introduced before remembering can no longer be said to occur, the simulationist offers a slippery slope argument against the necessity of appropriate causation. If we grant that remembering can occur in cases in which only a minority of the content of the retrieved representation is new, there is, the simulationist suggests, no non-arbitrary reason to deny that it can occur in cases in which a majority of the content of the representation is new. And if we grant that remembering can occur in cases in which a majority of the content of the representation is new, there is, he maintains, no non-arbitrary reason to deny that it can occur in cases in which the entirety of the content is new. But if we grant that remembering can occur in cases in which the entirety of the content of the retrieved representation is new, we have in effect rejected the appropriate causation condition, for then we can no longer require that the causal connection between the current representation and the earlier experience be sustained by a memory trace.

Given that he rejects the appropriate causation condition, the simulationist owes us an alternative to the causalist's account of the difference between remembering and relearning. Efforts have been made in this direction (Michaelian, 2016a), but our focus here is on imagining, and we will not consider relearning any further.<sup>8</sup> Consider, then, the second condition, which requires that the retrieved representation be produced by a reliable memory system. Noting that reliability by itself appears to be sufficient to mark the difference between remembering and the form of imagining at issue in Martin and Deutscher's hypnotist case, the simulationist argues that, once this reliability condition is introduced, there is no longer any role for the appropriate

<sup>7</sup> The attempt to reconcile the causal theory with the evidence on construction described here is based on that of Michaelian (2011). Other attempts include those of Werning (2020), which we discuss below, Perrin (2018), Robins (2016), and Sutton (1998).

<sup>8</sup> We set relearning aside in part because both causalists (Bernecker 2017) and simulationists (Michaelian 2020) have suggested that it ought not to be classified as a memory error, though some causalists (Robins 2020b) continue to treat it as such.

causation condition to play. The simulationist's position is not that retrieved memories are *never* causally connected to the corresponding earlier experiences. Nor is it even that retrieved memories are never *appropriately* causally connected to the corresponding earlier experiences. It is, rather, that the presence or absence of a causal connection is not what marks the difference between remembering and the kind of mere imagining that figures in the hypnotist case—what marks that difference is the reliability of the former process and the unreliability of the latter.

Simulationists thus disagree with causalists regarding the relationship between remembering and the kind of imagining at issue in Martin and Deutscher's hypnotist case. They also disagree with causalists regarding the relationship between remembering and the kind of imagining at issue when one anticipates possible future events. In imagining of the former kind, any correspondence between representation and reality is purely coincidental; it occurs despite the unreliability of the process that produces the representation. In imagining of the latter kind, in contrast, correspondence between representation and reality may occur due to the reliability of the process. The point about the phenomenological similarity between remembering and imagining made at the outset of the paper applies to both kinds of imagining, and a growing body of imaging, behavioural, clinical, and developmental evidence on memory as a form of mental time travel (Suddendorf & Corballis, 2007; Tulving, 1985) suggests that the similarity between remembering the past and imagining the future goes much deeper than this.

Just as research on constructive memory forms the basis of the simulationist's negative argument against CTM, research on memory as mental time travel forms the basis of his positive argument in favour of STM. We will not review this research in any detail here,<sup>9</sup> but it seems to suggest that remembering is, strictly speaking, carried out not by a dedicated memory system but rather by a broader episodic construction system responsible for enabling us not only to remember the past but also to imagine the future. In line with this research, the simulationist maintains that episodic memory and episodic future thought, as different manifestations of the same capacity to mentally travel in time, are distinguished only by their respective temporal orientations. In short, STM claims that a subject remembers a past event just in case he now represents it (the current representation condition) and his representation is produced by a reliable episodic construction system (the reliability condition). If STM is right, to remember just is to (reliably) imagine the past.

There is, naturally, room for disagreement over the implications of empirical memory research for causalism and simulationism. Appealing to a different body of evidence, Robins (2020a), for example, has argued that the empirical evidence favours CTM. On balance, however, the evidence seems, at least at present, to favour STM. In the remainder of this paper, we assume that this is the case and ask what follows regarding the causalist and simulationist accounts of the relationship between memory and imagination. We will argue that the acceptability of the causalist and simulationist accounts depends on which of two distinct *perspectives* on memory we adopt.<sup>10</sup>

<sup>9</sup> See Addis (2018) and Michaelian (2016b) for reviews.

<sup>10</sup> The notion of a perspective on memory is, of course, a metaphor; we unpack the metaphor in Sect. 4.

### 3 Perspectives on Memory

The basic idea that the acceptability of a theory of memory depends on the perspective on memory that one adopts is not new. Consider, for example, Don Locke's take on the questions "What precisely is memory?" and "What is it to remember something?" "These philosophical questions", he tells us,

need to be distinguished from the similar questions that might be asked by a psychologist or neurologist. There are problems about how memory operates, about what goes on in our body or brain when we remember, about what physical and psychological factors help or hinder our remembering, and so on. These are the concern of the scientist, who investigates the functioning of the human capacity we call memory. But our question is different: we are asking what memory is in itself, what that human capacity consists in, however it may operate. We want to explain not the mechanisms of memory, but its nature; not how it works, but what it is. The question is, in effect, what it is we are talking about when we talk about memory. (1971: 1)

If Locke's take is right, a theory that appears to be satisfactory from a *philosophical* perspective might be deeply unsatisfactory from a *scientific* perspective, and vice versa. But while there are certainly differences—for example, in terms of level of generality—between the answers that psychologists and neuroscientists typically offer and those that philosophers typically offer, both scientists and philosophers are, contra Locke, typically interested both in the "what it is" question and in the "how it works" question: scientists, like philosophers, attempt to define memory, and philosophers, like scientists, inquire, for example, into the role of traces in remembering.

The specifics of Locke's view are thus unconvincing. But the general idea that, when we ask what memory is or how it works, there is more than one question that we might be asking is nevertheless plausible, for, as we will argue following Craver (2020), while both questions are naturally asked from a *descriptive* perspective, both can also be asked from a *normative* perspective, and a theory that appears to be satisfactory from a descriptive perspective may appear to be deeply unsatisfactory from a normative perspective, and vice versa.

One might hope that a fully adequate theory of memory would be satisfactory from both the descriptive perspective and the normative perspective. But there is reason to doubt that it is possible, even in principle, to formulate a theory that would be fully satisfactory from both perspectives, for the two perspectives themselves impose competing demands on memory. The normative perspective—which, we will argue in Sect. 4, tends to be adopted in, e.g., courtroom contexts—takes the role of memory in our ordinary epistemic practices as its starting point. From the standpoint of these practices, to claim to remember is to commit oneself to the claim that the event that one allegedly remembers occurred and, moreover, that one knows that it occurred because one experienced it.<sup>11</sup> Thus, as far as the "what it is" question

<sup>11</sup> For views along these lines, see Debus (2017), Hoerl (2018), Mahr and Csibra (2018).

is concerned, memory appears, from the normative perspective, to require that the event represented by the subject actually occurred—i.e., memory appears to be *factive*.<sup>12</sup> As far as the “how it works” question is concerned, memory appears, from the normative perspective, to require that the subject now represent the event *because* he experienced it when it occurred. In contrast, the descriptive perspective—which tends to be adopted in, e.g., psychological contexts—arguably imposes neither of these requirements on memory, for, when we view memory from that perspective, it is the mechanisms that underwrite remembering, rather than their ability to provide us with knowledge of the past, that we see as central, and these mechanisms, given the available empirical evidence, may not be designed so as to ensure that memory represents only events that actually occurred because the subject experienced them when they occurred.<sup>13</sup>

### 3.1 The Normative Perspective

It may not be obvious, at first glance, how CTM relates to these two perspectives. Martin and Deutscher wrote at a very high level of generality, refraining from making any reference to the empirical details of the mechanisms involved in human remembering, and it can thus be tempting to read them as adopting the normative perspective. But while their theory is meant to apply to memory not only as it happens to work in human beings but also as it might work in any possible kind of rememberer, it is indeed meant to apply to memory as it works in human beings. When Martin and Deutscher analyze remembering by means of the current representation, previous experience, and appropriate causation conditions, in other words, they take their analysis to capture the core features of human remembering. Their story about memory traces, for example, is not particularly detailed, but it is nevertheless a story about the mechanism that underwrites remembering. CTM is thus indeed meant to be adequate from the descriptive perspective.

From the descriptive perspective, however, CTM is problematic. It is problematic, to begin with, in virtue of a number of its specific claims. Martin and Deutscher worked with a conception of traces as “structural analogues” of experience—think of the relationship between the grooves of a record and the sounds to which they correspond—but it is doubtful that there is any structural analogy between traces

<sup>12</sup> It might be objected that, because the normative perspective on memory treats memory as factive, one who adopts that perspective will not take the evidence, reviewed in Sect. 2.1 above, that subjects can, under certain conditions, come to “remember” events that they did not experience to undermine the causal theory of memory, since, from the normative perspective, that evidence can only concern merely apparent memory. (Thanks to an anonymous reviewer for suggesting this objection.) In reply, we acknowledge that, from a normative perspective, the evidence in question will indeed appear to be irrelevant but point out that our discussion of the evidence in Sect. 2.1 concerns a descriptive stage of the causalist-simulationist debate and that, from a descriptive perspective, the evidence on, e.g., “lost in the mall” memories (Loftus 1996) is straightforwardly relevant.

<sup>13</sup> The terms “normative” and “descriptive” have connotations that go beyond our definitions of the normative and descriptive perspectives. We ask the reader to set these connotations aside in what follows, treating the terms “normative” and “descriptive” as mere labels for the two perspectives that we have defined.



and the experiences to which they correspond (Sutton, 1998). Alternative conceptions of traces are available (see De Brigard, 2014b, 2020; Robins, 2017), and it may thus be possible for CTM to overcome this problem. But the theory also appears to be problematic in more general terms, for the claim that remembering necessarily involves a causal connection that is sustained by a memory trace (of one kind or another) is, as we saw in Sect. 2, difficult to reconcile with the empirical evidence.

Responding to this problem, causalists have made a number of attempts to reformulate CTM so as to render it compatible with the empirical evidence, but this has proven not to be an easy task. Consider, in addition to the modified version of the causal theory discussed in Sect. 2.2, a particularly sophisticated recent attempt to formulate an empirically defensible causalist approach, Werning's (2020) account of remembering as "predicting the past" on the basis of memory traces that do not themselves transmit content deriving from past experience. Though he maintains that remembering always involves traces of this kind, and though he maintains, for general metaphysical reasons, that remembering always involves a causal connection to the remembered event, he holds that remembering does not always involve an *appropriate* causal connection to the subject's experience of the remembered event at the time at which it occurred. In a nutshell, Werning's view, developed in response to evidence on vicarious memories (Pillemer et al., 2015), is that one may genuinely remember an event that one did not oneself experience if one imagines it on the basis of testimony received from someone who did experience it and if one's current representation is causally connected, via a memory trace, to one's imagining of it. In such cases, one's current representation is causally connected to the event, and it is appropriately causally connected to the imagining, but it is not appropriately causally connected to the event. Werning's overall position is thus, at best, a hair's breadth away from postcausalism.<sup>14</sup>

Despite the difficulties encountered in attempting to reformulate CTM so as to render it compatible with the empirical evidence, a majority of philosophers of memory continue to endorse causalism (Michaelian & Robins, 2018). Their reluctance to abandon CTM may, we suggest, be due to their sensitivity to normative in addition to descriptive concerns. Though philosophers generally consider themselves to be after a descriptive theory of memory—Bernecker (2008), for example, describes his subject as "the metaphysics of memory"—it is only to be expected that they are sensitive to normative concerns: philosophers are, in most cases, interested at least to some extent in the ordinary concept of memory, and it would be surprising, in light of the role of memory in our ordinary epistemic practices, if that concept were to lack a normative dimension. And CTM aligns well with the normative perspective, in that, if the fact that a subject remembers an event implies that his current representation of the event is appropriately causally connected to his earlier experience of the event, both of the requirements imposed on remembering by the normative perspective are satisfied: the fact that a subject remembers an event

<sup>14</sup> Because Werning holds that imagining an event on the basis of testimony received from someone who experienced the event can amount to vicariously experiencing the event, he himself does not take his position to be a form of postcausalism.

implies that the event occurred and that the subject now represents it because he experienced it when it occurred.

It might be objected that, while our argument for the view that CTM aligns well with the normative perspective presupposes a causal interpretation of the idea that, if a subject remembers an event, then he now represents it *because* it occurred, other interpretations of that idea are available. It might be objected, in particular, that, given that the epistemic theory of memory holds that remembering implies retention but not causation (e.g., Squires, 1969), the normative perspective aligns just as well with the epistemic theory as it does with the causal theory. Our reply to this objection is twofold. First, we point out that a pure retention condition is unlikely to be viable. As Bernecker notes, such a condition can be attractive “only as long as one doesn’t ask what is involved in the retaining of a piece of knowledge” (2008: 27). Once this question is asked, the epistemic theorist has two options: either he acknowledges that retention must be understood as a causal process or he refuses to do so (see Deutscher, 1989). If he refuses to acknowledge that retention must be understood as a causal process, then he makes memory into “a magical faculty” (Bernecker, 2008: 28). If he acknowledges that retention must be understood as a causal process, then the epistemic theory presumably collapses into a causal theory of some sort. Assuming that the normative perspective does not commit us to seeing memory as a magical faculty, then, we should take that perspective to align with a form of causalism.<sup>15</sup> Second, we point out that, if a pure retention condition should, despite the foregoing, turn out to be viable, then it becomes an empirical question whether the normative perspective aligns with a causalist or with an epistemic conception of remembering. Our bet here is on alignment with the causalist conception, but we grant that there is no guarantee that this bet is right.

### 3.2 The Descriptive Perspective

The situation with respect to STM is essentially a mirror image of the situation with respect to CTM. As we saw above, because it is designed to accommodate the empirical evidence on constructive memory, STM rejects the appropriate causation condition; it therefore fails to align with the normative perspective in that it does not entail that the fact that a subject remembers an event implies that he now represents it because he experienced it when it occurred. It also fails to align with the normative perspective in that it does not entail that the fact that a subject remembers an event implies that the event occurred: because STM is designed to accommodate the empirical evidence on mental time travel, it treats successful remembering as being just one possible outcome of a more general imaginative process that sometimes aims at producing an accurate representation of a past event but that does not

<sup>15</sup> While the epistemic theory presumably collapses into a causal theory, it may not collapse into anything like Martin and Deutscher’s causal theory: whether the kind of causal process that underwrites retention of knowledge aligns with the notion of appropriate causation is an open question. What matters here, however, is whether the epistemic theory aligns with causalism, broadly understood.

always do so and that need not succeed in producing an accurate representation even when it does do so.

The fact that a subject *successfully* remembers an event does, the simulationist grants, imply that it occurred. But the simulationist argues that it is a mistake to equate—as we do if we treat memory as factive—*remembering* with *successful* remembering. This argument is in line with the conception of remembering at work in psychology, where the view that memory is factive is basically unheard-of. Indeed, not only do psychologists not treat memory as factive, they sometimes go so far as to treat it as counterfactive, arguing that “remembering is intrinsically reconstruction and hence inevitably unreliable” (Ost & Costall, 2002: 246). As Ost and Costall point out, this argument rests on the assumption that construction implies inaccuracy, an assumption that is, as they note and as we pointed out above, incorrect: just as a prediction of a future event can be accurate despite not being based on content transmitted from experience of that event, a “prediction” of a past event can be accurate despite not being based—or not being entirely based—on content transmitted from experience of that event. On balance, then, the conception of remembering that emerges from psychology suggests that remembering is neither factive nor counterfactive, and this is how it is treated by STM.

It might be objected that, because it employs the concepts of accuracy and reliability, and because those concepts are themselves normative, STM is not entirely free of normative commitments.<sup>16</sup> In reply, we note, first, that an argument along these lines is suggested by Bernecker (2017, 2022), who groups Michaelian’s simulationist account of confabulation with Hirstein’s account, treating both as epistemic accounts. As Michaelian (2020, 2022) points out, this is a mistake: in contrast to Hirstein’s account, which employs properly normative vocabulary, referring, for example, to the justifiedness of confabulators’ beliefs, Michaelian’s does not, as the concept of reliability—for it is Michaelian’s use of that concept, which he borrows from reliabilist epistemology, that leads Bernecker to treat his account as an epistemic account—is not itself normative. Certain normative theories—including reliabilism—do, of course, make use of the concept of reliability. But, just as the fact that certain normative theories—such as utilitarianism—make use of the concept of net pleasure does not imply that net pleasure is a normative concept, the fact that certain normative theories make use of the concept of reliability does not imply that reliability is a normative concept. The same thing goes, of course, for STM as such. We note, second, that accuracy is no more a normative notion than is reliability. If it were, then any approach to remembering—including purely experimental approaches—that distinguishes between accurate and inaccurate memories would have a normative character. There may be a sense in which any approach to remembering that distinguishes between accurate and inaccurate memories has a normative character, but the sense in question is too limited to be relevant to the normative perspective as we understand it here, since that perspective concerns not the mere distinction between accurate and inaccurate memories but rather the conditions that need to be met in order for a subject to count as successfully remembering. There

<sup>16</sup> Thanks to an anonymous referee for insisting on the importance of this objection.

is, naturally, more to be said concerning the purely descriptive character of simulationism. In particular, it might be objected that, even if the concepts of accuracy and reliability are not themselves normative, STM, precisely because it makes use of those concepts in attempting to state the conditions that need to be met in order for a subject to count as successfully remembering, itself ultimately has a normative character. We discuss this further objection in Sect. 5 below.

Though STM thus seems to align well with the descriptive perspective, causalists have argued that the simulationist claim that remembering is just one possible outcome of a more general imaginative process that need not succeed in producing an accurate representation even when it aims to do so means that the theory fails to respect the empirical distinction between successful remembering and forms of unsuccessful remembering such as confabulating and misremembering. Robins, in particular, responding to De Brigard's suggestion that, both in cases of remembering and in cases of confabulating, the memory system "is doing what it is supposed to do" (2014a: 172), has argued that STM "collapse[s] the processing distinction between memory errors and successful remembering" (2016: 441). The core claim of her argument is that, while simulationism may be able to acknowledge a difference between successful remembering and unsuccessful remembering with respect to the accuracy of the representations that they produce, it is unable to acknowledge a difference between them with respect to the processes that produce those representations.

If this claim were right, then STM would straightforwardly be descriptively inadequate. As Michaelian (2016a) has pointed out, however, the claim is not right. STM does indeed "collapse the processing distinction" between successful remembering and *misremembering*, the form of unsuccessful remembering at work in, for example, the DRM effect (in which the subject studies a set of thematically-related items and then incorrectly remembers a nonstudied but thematically-consistent item as having been part of the set). On the simulationist view, there is a single reliable imaginative process at work in both successful remembering and misremembering, the two being distinguished only by the accuracy of the representations that they produce. But CTM likewise collapses this distinction. On the causalist view (defended by Robins herself), the same appropriate causal connection is present in both successful remembering and misremembering, the two being distinguished only by the accuracy of the representations that they produce.

Now, CTM, it is true, does not collapse the processing distinction between successful remembering and misremembering, on the one hand, and confabulating (in which a subject with impaired memory "makes up" a past event), on the other hand. On the causalist view, successful remembering and misremembering are distinguished from confabulating by the presence, in the case of successful remembering and misremembering, and the absence, in the case of confabulating, of an appropriate causal connection. But STM likewise does not collapse this distinction. On the simulationist view, successful remembering and misremembering are distinguished from confabulating by the reliability, in the case of successful remembering and misremembering, and the unreliability, in the case of confabulating, of the imaginative process. That STM treats memory as a kind of imagination does not, in short, mean that it fails to respect the distinction between successful remembering and the

kind of imagining that is at issue in confabulation, a kind of imagination in which, as in Martin and Deutscher's hypnotist case, any correspondence with the past is purely coincidental. Robins' argument thus does not undermine the descriptive adequacy of STM.<sup>17</sup>

## 4 Explanatory Contextualism

The question with which we began was which of causalism and simulationism best captures the relationship between memory and imagination. We have argued that causalism and simulationism tend to align with alternative perspectives on memory—causalism with the normative perspective and simulationism with the descriptive perspective. Since we cannot adopt the normative perspective and the descriptive perspective simultaneously, it would seem that we need to choose between the perspectives, which would in turn commit us to choosing between the causal theory and the simulation theory. We will argue in this section, however, that there is no need for us to choose, once and for all, between perspectives and consequently no need for us to choose, once and for all, between theories.

The notion of a perspective on memory is a metaphor, but it is one that we have chosen deliberately. Different visual perspectives reveal different features of a scene. One perspective might be preferable to another for certain purposes, but no single perspective is necessarily always best. In general, the perspective on a scene that we ought to adopt depends on our purposes in looking at the scene. Similarly, different "perspectives" on memory emphasize different features of memory. The descriptive perspective might be preferable to the normative perspective in a given context, or vice versa, but neither perspective is necessarily always best.<sup>18</sup> The perspective on memory that we ought to adopt depends on our purposes in the relevant context.

Moving beyond the metaphor, this section proposes a form of contextualism on which there is, in an important sense, no incompatibility between CTM and STM. Relative to a given context, we cannot have it both ways: at most one of CTM and STM can be right. But we are not bound to a single context, and, while CTM is preferable relative to some contexts, STM is preferable relative to others. Which of causalism and simulationism best captures the relationship between memory and imagination thus depends on the context in which we find ourselves.

<sup>17</sup> The confabulation debate is ongoing, and there are additional arguments in favour of and against both simulationist and causalist approaches. See (in addition to Robins 2016 and Michaelian 2016a) Bernecker (2017), Robins (2019, 2020b), Michaelian (2020). Our aim here is not to settle the debate in favour of one or the other approach but only to show that Robins' argument does not suffice to establish that STM is not descriptively adequate.

<sup>18</sup> Nor is a given perspective always preferable in a given context: as we will see below, there is not a one-to-one relationship between contexts and perspectives.

## 4.1 Explanatory Contextualism About Perception

It will be helpful to begin by considering a form of contextualism developed in a distinct field, the philosophy of perception. The dominant *representationalist* view of perception treats perceptual states as representations: just as beliefs represent the world as being a certain way, so do perceptual states (see, e.g., Siegel, 2010). The ways that beliefs and perceptual states represent—the representational format at work in each case—may be very different, but this does not matter here. What matters is that, according to representationalism, perceiving is a matter of representing objects as having properties: to see, for example, a white cube is to represent a cube as being white. According to the alternative *relationalist* view, representationalism is fundamentally mistaken: perceptual states do not *represent* objects at all; instead, they are partly *constituted* by objects (Brewer, 2010; Campbell, 2002). To see a white cube, for the relationalist, is not to represent a cube as being white but rather to be related in a certain way to a white cube. These two approaches to perception appear to be mutually incompatible: according to one, perceptual states are representations; according to the other, they are not. There have nevertheless been a number of attempts to effect a compromise between them, the most relevant of which, for our purposes here, is Nanay's (2015) explanatory contextualism (see also Mehta, 2014).

Nanay argues that representationalism and relationalism can be taken as giving different accounts of how perceptual states are individuated. Disagreements about how to individuate entities of a given kind are familiar from other domains. One way of understanding the question what is a lung, for example, is to treat it as asking what makes a lung different from bodily organs of other types. Similarly, Nanay suggests, one way of understanding the question about the answer to which representationalists and relationalists disagree is to treat it as asking what makes a perceptual state different from mental states of other types. In both domains, different answers to these questions will have different implications for the individuation of entities of the relevant type. On the suggested approach, representationalism says that perceptual states are to be individuated in terms of their content: two perceptual states are different if the properties perceptually attributed to the perceived object are different. Relationalism, in contrast, says that perceptual states are to be individuated in terms of the objects that partly constitute them: two perceptual states are different if the perceived objects are different.

Given that representationalism and relationalism are taken as giving different accounts of how perceptual states are individuated, Nanay argues, it may not be necessary to choose between them. His key move is to claim that the appropriate way of individuating perceptual states depends on the explanatory project in which we are engaged: relative to some explanatory projects, we are better off individuating them along representationalist lines; relative to others, we are better off individuating them along relationalist lines. Nanay provides the following illustration of the claim.

If a vision scientist is doing research on the shape-recognition mechanisms of the human perceptual system, she will be unlikely to individuate perceptual states according to [relationalism], but she will rather use [representational-

ism]: what matters for this specific explanatory project is the properties that are perceptually attributed and the mechanism that attributes them. It is not particularly important (again, in this specific explanatory project) what token entities these properties are attributed to. Conversely, if a psychologist or philosopher is enquiring into the differences and similarities between vision and visual imagery, then [relationalism] may be a helpful way of individuating perceptual states—[representationalism] may be less relevant. (2015: 327)

The key point, for present purposes, is that, if explanatory contextualism is right, then neither representationalism nor relationalism is wrong.

Explanatory contextualism is not an ad hoc view. An important lesson from the philosophy of biology is that the individuation of biological traits depends on explanatory context in precisely the manner suggested by the explanatory contextualist. In biology, there are (at least) least three different ways of individuating biological traits: they can be individuated by functional, morphological, or homological criteria. From a functional perspective, a lung is a lung because it stands in a certain functional relation to the rest of the body. From a morphological perspective, it is a lung because it has a certain shape, colour, etc. From a homological perspective, it is a lung because it has a certain evolutionary history—because the ancestor of the organism that has the lung also had lungs. The lesson taught by the philosophy of biology is that none of these criteria applies in all possible cases (Nanay, 2010, 2012; Neander, 2002); instead, the individuation of biological traits depends on the explanatory project in which the biologist is engaged. The explanatory contextualist maintains that, given that perceptual systems are biological traits just as much as lungs are, these considerations can be extended to the individuation of perceptual states.

## 4.2 Explanatory Contextualism About Memory

Given that memory systems are biological traits, these considerations could in principle be extended to memory as well as perception, and it would be natural, given the foregoing, for us to make a move with respect to memory analogous to the move made by Nanay with respect to perception. This is indeed what we propose to do, but the analogy between our move and his is somewhat loose.

There are two obvious ways of developing an explanatory contextualism about memory modelled closely on explanatory contextualism about perception.<sup>19</sup> A

<sup>19</sup> A number of other forms of contextualism about memory have been proposed. Bernecker (2008), for example, argues that the accuracy condition is context-sensitive in that the required degree of accuracy can vary from context to context (see also Sutton 2003). Michaelian (2016b) argues that the reliability condition is context-sensitive in that the required degree of reliability varies from context to context. The explanatory contextualism that we defend here is independent of these views. The explanatory contextualism that we defend here, which does not hold that the standards for knowledge become more or less demanding as the context of the rememberer (or of a speaker assessing the rememberer) shifts, is independent of these views and of other approaches inspired by contextualist epistemology. On the relationship between the explanatory contextualism that we defend here and contextualist views of the latter sort, see Sect. 6.

first, fairly direct way would be to treat CTM and STM as telling different stories about how memories are to be individuated. According to causalism, what distinguishes memory from imagination is the presence of an appropriate causal connection; according to simulationism, what distinguishes memory from imagination is the reliability of the process that produces the representation. Thus CTM might be treated as saying that two memories are different if they have different causal histories and STM as saying that two memories are different if the processes that produced them have different levels of reliability.

This form of contextualism would be worth exploring, but, for two reasons, we will not do so here. First, there is no clear relationship between the suggested individuation criteria and the normative and descriptive perspectives in which we are interested. Second, the disagreement between the normative and descriptive perspectives does not concern individuation.

A second, somewhat less direct way of developing an explanatory contextualism about memory modelled closely on explanatory contextualism about perception would be to begin by noting that, just as there is a debate between representationalists and relationalists about perception, there is a debate between representationalists and relationalists about memory. Representationalism about memory takes memories to represent events. To remember one's tenth birthday party, according to the representationalist, is to represent an event as having had certain properties (taking place on one's tenth birthday, perhaps involving cake and gifts, etc.). Relationalism about memory takes memories not to represent events but rather to be partly constituted by them. To remember one's tenth birthday party, according to the relationalist, is to be related in a certain way to an event (that took place on one's tenth birthday, involved cake and gifts, etc.). At first glance, representationalism might seem to align with STM, which emphasizes our ability to represent events regardless of whether they actually occurred, and relationalism might seem to align with CTM, which emphasizes causal relations between memories and the events of which they are memories. We might therefore attempt to apply the contextualist strategy directly to representationalism and relationalism, thereby applying it indirectly to simulationism and causalism. This form of contextualism would treat representationalism as saying that memories are to be individuated in terms of their content (two memories are different if the properties attributed to the remembered event are different) and relationalism as saying that memories are to be individuated in terms of the objects that partly constitute them (two memories are different if the remembered events are different). It would go on to claim that the appropriate way of individuating memories depends on the explanatory project in which we are engaged: in some contexts (say, where we are interested in the operation of the episodic construction system), the representationalist criterion might be preferable, whereas in other contexts (say, where we are interested in the differences and similarities between memory and other forms of episodic thought), the relationalist criterion might be preferable. If simulationism and causalism were indeed to align, respectively, with representationalism and relationalism, this form of explanatory contextualism would have the implication that STM is preferable in some contexts, whereas CTM is preferable in others.



This form of contextualism, like the previous version, would be worth exploring, but, for two reasons, we will not do so here. First, causalism and simulationism do not align in any straightforward way with representationalism and relationalism. As far as causalism is concerned, Debus (2008) has argued for a relationalist version of CTM, but her argument does not clearly differentiate the causal relation that figures in causalism from the constitution relation that figures in relationalism (Aranyszi, 2021). These two relations are distinct, and holding that memory necessarily involves one does not require one to hold that it involves the other. Most causalists, indeed, have been and continue to be representationalists (see Sant’Anna 2022). As far as simulationism is concerned, the version of STM defended by ) incorporates representationalism, but, given that the causal relation that figures in causalism is distinct from the constitution relation that figures in relationalism, there would be no obvious contradiction involved in combining simulationism with relationalism. Second, while we might set causalism and simulationism aside to focus exclusively on the implications of representationalism and relationalism for the individuation of memories, the disagreement between the normative and descriptive perspectives does not, as already noted, concern individuation.

We therefore turn to a form of explanatory contextualism about memory modelled only loosely on explanatory contextualism about perception. Above, we argued that CTM aligns better with the normative perspective, while STM aligns better with the descriptive perspective. We will now argue, first, that, while we might in principle adopt either the normative perspective or the descriptive perspective in any given context, we tend to adopt each perspective in contexts of specific kinds and, second, that our aims in contexts of both kinds are legitimate. This implies that we may legitimately prefer to understand memory—and its relationship to imagination—in line with CTM in some contexts and in line with STM in others.

The contexts in which we tend to adopt the normative perspective are those in which we are concerned, first and foremost, with the knowledge that memory provides—memory is understood, in these contexts, as a source of knowledge. We offer two examples of contexts of this kind. Consider, first, courtroom contexts. The fact that someone genuinely remembers an event is normally taken, in such contexts, to imply that the event occurred; if it were not, it would be difficult to see why eyewitness testimony should be assigned any more weight in the courtroom than inference. Similarly, the fact that someone remembers an event is normally taken, in courtroom contexts, to imply that he now recollects it because he experienced it when it occurred; if it were not, it would be difficult to see why eyewitness testimony should be assigned any more weight in the courtroom than knowledge based on testimony (in the epistemologist’s sense). In these contexts, in short, we adopt the normative perspective and hence treat memory as having roughly the features that are attributed to it by CTM.

Consider, second, everyday conversational contexts. In such contexts, memory functions as what Henry and Craver (2018) refer to as a “witness trump card”. Witnesses, they write, “can speak with authority about certain aspects of the event, whereas non-witnesses cannot”. What they mean to say is, we take it, that memory is treated, in everyday conversational contexts, as providing a special form of knowledge of the past, in the sense that a claim to remember a given event, if accepted,

trumps a claim to have knowledge of that event based on a source such as testimony or inference (see also Mahr & Csibra, 2018). The specialness of this form of knowledge is a matter not of its reliability but rather of its directness: memory, unlike inference and testimony, is treated as providing a direct link to past events. This suggests that, in such contexts, as in courtroom contexts, we adopt the normative perspective and hence treat memory as having roughly the features that are attributed to it by CTM.

There are two points to note about these examples. First, the fact that memory is treated, in the contexts in question, as providing a special form of knowledge of the past does not imply that it is in fact capable of providing such a form of knowledge. Henry and Craver point out that it does imply that we “have the capacity to reconstruct events and attribute them to [our] personal pasts”, i.e., that we are capable of remembering. It may also imply that memory seems, to the rememberer, to provide a direct link to the remembered event. If it did not, it is hard to see how the practice of assigning special weight to memory should have emerged.<sup>20</sup> And it may imply that memory is reasonably reliable. If it were not, that practice would be unlikely to persist.<sup>21</sup> But it does not imply that memory actually provides a direct link to past events, and the empirical evidence suggests, we have argued, that, at least in many cases, memory does not in fact provide such a link.

Second, the previous point does not imply that it is illegitimate, when we adopt the normative perspective, to count as memories only those states that satisfy CTM’s conditions, for what we attempt to explain, when we adopt the normative perspective, is not memory as such but rather the standards that one needs to meet in order to be able legitimately to claim to remember—this is what makes the normative perspective normative. These standards are determined not by memory itself but rather by the practices in which it figures. If one’s claim to remember is challenged, in an everyday conversational context or in a courtroom context, by an interlocutor who points out that one’s apparent memory is inaccurate or that, though it is accurate, it is accurate only because one was told, after the fact, about the event that one allegedly remembers, it would be absurd for one to reply by pointing out that the empirical evidence suggests that memory requires neither accuracy nor appropriate causation. What we care about, in these contexts, is not whether the subject remembers, in the sense that he is able reliably to construct a representation of a past event. What we care about is not even whether he remembers, in the sense that his representation of a past event is accurate. What we care about is, instead, whether he remembers, in the sense that his representation of a past event is accurate because he experienced that event. It is thus CTM’s conditions that are appropriate in such contexts; STM’s conditions are simply irrelevant.

The contexts in which we tend to adopt the descriptive perspective are those in which we are concerned with memory in its own right—memory is treated, in these

<sup>20</sup> This is plausible enough: Fernández (2019), for example, argues that each retrieved memory includes reflexive content to the effect that it was caused by the past experience that it depicts.

<sup>21</sup> This, too, is plausible: as noted above, the empirical evidence regarding the numerous and systematic errors involved in remembering does not imply that memory is unreliable overall.

contexts, as an *object* of knowledge rather than a *source* of knowledge. In other words, what we attempt to explain, when we adopt the descriptive perspective, is not the standards that one needs to meet in order to be able legitimately to claim to remember; what we attempt to explain is, instead, the nature and workings of the capacity that may or may not enable us to meet those standards. This is what makes the descriptive perspective descriptive. We offer two examples of contexts of this kind. Consider, first, psychological contexts. As we saw in Sect. 2, the evidence from research on constructive memory and memory as mental time travel suggests that the fact that someone remembers an event implies neither that the accuracy condition is met nor that the appropriate causation condition is met and, indeed, that, far from being sharply distinct from imagination, memory is in fact a form of imagination. This does not mean that psychologists are unable to distinguish or uninterested in distinguishing between memories that satisfy the accuracy and appropriate causation conditions and those that do not. As we saw in Sect. 3, it is perfectly possible, from a simulationist perspective, to distinguish between apparent memories that represent events that occurred and apparent memories that represent events that did not occur. It is also possible, from a simulationist perspective, to distinguish between those memories that involve information deriving from the subject's original experience of the remembered event and those that do not. But while both distinctions may sometimes be of interest, the fact that memory is a form of imagination does mean that it is STM's conditions, and not CTM's, that are relevant in determining whether to count a give mental state as a memory.

An additional reason for rejecting the accuracy and appropriate causation conditions, in psychological contexts, is that the idea that memory serves multiple functions, only one of which is to provide accurate representations of events from one's personal past, is taken seriously in these contexts. According to prevailing theories in the psychology of memory, memory serves three major functions (see, e.g., Bluck, 2003; cf. Harris et al., 2014). The first is a self or identity function: we recall events from the past because our memories tell us who we are, providing a sense of diachronic continuity (e.g., Conway, 2005). The second is a directive or problem-solving function: we recall events from the past in order to learn lessons or to predict and plan for the future (e.g., Pillemer, 2003). The third is a social or communicative function: remembering the past and talking about it with other people helps to build and maintain intimacy in relationships (e.g., Alea & Bluck 2003). Particularly in contexts in which memory does not function to provide an accurate representation of an event from the rememberer's past but rather serves one of these identity, directive, or social functions, it is important to be able to count as memories representations that derive from sources of information other than the rememberer's experience of the remembered event (Conway & Loveday, 2015). If, for example, one represents an event from one's childhood not on the basis of one's own experience of that event but rather on the basis of the testimony of others, this representation may still serve the directive function—one can learn from such events and use them to plan one's future behaviour.<sup>22</sup>

<sup>22</sup> Indeed, while existing formulations of STM assume that one can only (episodically) remember events from one's own personal past, simulationists may ultimately want to abandon even this restriction. Consider vicarious memories, which occur "when the memories of others become a part of reality for those

Consider, second, philosophy of mind contexts. In principle, philosophers of mind, including philosophers of memory, adopt the descriptive perspective. In practice, as noted above, most philosophers of memory nevertheless continue to endorse CTM. We have already suggested an explanation for this state of affairs: philosophers are drawn to CTM because they are concerned with the ordinary concept of memory and are thus sensitive to normative concerns. In support of this explanation, note that positive arguments for CTM tend to be largely a priori in character. Martin & Deutscher, 1966, for example, the locus classicus of causalism, is free of any reference to the psychology of memory; Bernecker, 2008 and 2010, the major recent statements of CTM, contain few such references. There are exceptions (e.g., Robins, 2016; potentially Sutton, 1998; De Brigard, 2020), but, when causalists do take empirical memory research into account, then, to the extent that they are concerned with the status of the causal theory itself, as opposed to more specific issues,<sup>23</sup> their arguments tend to take on a negative character: the aim is not to derive causalism from empirical memory research but rather to show that it is (if suitably modified) compatible with that research. Michaelian, 2011, described in Sect. 2.1 above, provides one example of this approach; Werning, 2020, described in Sect. 3.1, provides another. Again, what we mean to suggest is not that there are competing scientific and philosophical perspectives on memory, with the scientific perspective leading to simulationism and the philosophical perspective to causalism. What we mean to suggest is, instead, that, when philosophers proceed in an a priori manner, they attempt to adopt the same descriptive perspective that empirical scientists adopt<sup>24</sup> but fail fully to do so because they rely on the ordinary concept of memory, a concept that is shaped by the role played by memory in contexts in which we tend to adopt the normative perspective.

We assume that there is no need to argue that it is legitimate to adopt the descriptive perspective in psychological contexts, philosophy of mind contexts, and like contexts. We have argued that it is legitimate to adopt the normative perspective in everyday conversational contexts, courtroom contexts, and like contexts. There is, as noted above, not a one-to-one relationship between contexts and perspectives. The descriptive perspective might sometimes be adopted in courtroom contexts, as when, for example, a memory researcher serves as an expert witness. And some philosophers of mind hold that it can be appropriate to adopt a normative perspective in philosophy of mind. Nevertheless, there is a rough alignment between the first kind

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Footnote 22 (continued)

who hear the memories but have not experienced the events to which the memories refer" (Teski & Climo 1995: 9). Vicarious memories are not false memories: the rememberer does not mistakenly think that the event in question happened to him. Importantly, however, they serve the same identity, directive, and social functions as episodic memories, leading Pillemer et al. to argue that "current conceptions of autobiographical memory ... should be expanded to include detailed mental representations of specific past events that happened to other people" (2015: 233).

<sup>23</sup> CTM informs, for example, McCarroll's (2018) investigation of observer perspective memory, but McCarroll is concerned primarily with that specific form of memory and only secondarily with the status of the causal theory itself.

<sup>24</sup> Scientists may likewise fail fully to adopt the descriptive perspective. The tendency, noted above, of some psychologists to equate construction with error is illustrative of this point.

of context described above and the normative perspective and between the second kind of context described above and the descriptive perspective. We thus arrive at the conclusion that *we may legitimately prefer to understand memory and its relationship to imagination in line with STM in some contexts and in line with CTM in others.*

## 5 Craver on the Normative and Descriptive Perspectives

Craver (2020) defends a position that bears important similarities to the form of explanatory contextualism that we have developed here. In this section, we differentiate our position from his. Despite their similarity, the two positions are distinct and ultimately opposed: like us, Craver distinguishes between two perspectives on memory, but his characterizations of these perspectives differ from ours, and, in consequence, he is considerably more optimistic than we are with respect to the possibility of reconciling them.

Whereas we have referred to a *descriptive* and a *normative* perspective on memory, Craver refers to an *empirical* and an *epistemic* view of memory.<sup>25</sup> Advocates of the empirical view, he writes, “[treat] remembering as a psychological capacity and [seek] to reveal its underlying mechanisms, systems, and processes” (268). On this view, remembering is a reconstructive process and, indeed, a form of mental time travel. Advocates of the epistemic view, in contrast, treat memory as “factive (necessarily true) because remembering thus characterized is an epistemic achievement, not merely the actualization of an empirical capacity” (265). On this view, “[r]emembering ... has a success condition in which a subject correctly retains knowledge of non-occurrent particular events or things obtained on the basis of first-hand experience” (266).<sup>26</sup> His descriptions of the empirical and epistemic views are thus similar to our descriptions of the descriptive and normative perspectives, and we will take them to refer to the same perspectives on memory.

The key difference between Craver’s position and ours is that, whereas we link the descriptive perspective to simulationism and the normative perspective to causalism,

<sup>25</sup> As Craver himself suggests, the choice of one set of terms over the other may be more or less arbitrary.

<sup>26</sup> While we read Craver as linking the epistemic view to the accuracy condition and the previous experience condition, the formulation just quoted (along with several others employed by Craver) suggests that he should instead be read as linking it to the *epistemic theory of memory*, a theory on which to remember is to retain knowledge (see Senor 2019). If the latter reading is right, then his position is quite remote from ours and would require a much longer discussion than we are able to provide here. For two reasons, however, that reading is unlikely to be right. First, Craver does not refer explicitly to the epistemic theory of memory. Second, many of his claims about the epistemic view would be implausible were he to intend to link it to the epistemic theory. Consider his claim that the epistemic view is presupposed by empirical memory research. We argue below that this claim is incorrect, but we grant that it is not implausible if the epistemic view is linked to the accuracy condition and the previous experience condition. If the epistemic view is instead linked to the epistemic theory, the claim is highly implausible: there is simply no sense in which empirical memory research can reasonably be taken to presuppose that to remember is to retain knowledge.

he acknowledges no particular link between the empirical view and simulationism or between the epistemic view and causalism. Thus he says, for example, that “[t]o claim to remember is to stake a claim about the past, to hold that the past event happened and that one experienced it first-hand”, linking the epistemic perspective to the accuracy condition and the previous experience condition, but he maintains that “success in remembering can be specified completely without mentioning the word cause or appeal to a trace” (267).<sup>27</sup> He is thus able to argue that there is ultimately no incompatibility between the epistemic view and the empirical view: “[t]he epistemic commitments I sketch here should be entirely compatible with the constructivist consensus about empirical memory” (267).

The fact that Craver does not build commitments regarding the necessity or non-necessity of appropriate causation into his descriptions of the epistemic and empirical views makes his optimism regarding the compatibility of the two views possible. It also, in our view, makes it unjustified. If our argument in Sects. 3 and 4 is right, the two views are compatible insofar as we are under no obligation to choose between them once and for all, but they are incompatible insofar as they entail incompatible accounts of memory, with the consequence that we can only coherently adopt a single perspective in any given context. We cannot, in other words, coherently adopt the normative perspective while signing on to the “constructivist consensus regarding empirical memory”. The difference, then, between Craver’s view and our own is that for Craver the epistemic and the empirical are compatible in the sense that they are perspectives on different things. In our own view there is one thing (memory) but it can be understood differently in different contexts. Some contexts favour the normative perspective while others favour the descriptive. There is no incompatibility here. But there is incompatibility in the sense that we cannot simply appeal to both the normative and the descriptive in one and the same context.

Craver is more optimistic than us not only about the compatibility of the epistemic and empirical views but also about the priority of the epistemic view relative to the empirical view. He argues, first, that the epistemic view cannot be “reduced” to the empirical view, claiming that the success conditions on remembering posited by the epistemic view cannot be derived from empirical facts about the nature and workings of memory:

Empirical remembering, as a theoretical construct, treats normative and non-normative remembering as equivalent to one another, lumping them into the operation of a single, constructive memory system. [...] The empirical theory of remembering, that is, does not contain within its conception of memory the resources to distinguish normative from non-normative remembering .... (271)

<sup>27</sup> Although Craver invokes both the accuracy condition and the previous experience condition, his discussion focuses primarily on accuracy. Since simulationism differs from causalism not only with respect to the necessity of accuracy but also with respect to the necessity of previous experience, a full discussion of the relationship between his position and ours would have to take the previous experience condition into account, but we will here follow Craver in focusing on the accuracy condition.

On one reading, Craver's argument here is analogous to the argument deployed by Robins in support of the conclusion that simulationism cannot distinguish between successful and unsuccessful remembering: because the empirical view "collapses the processing distinction" between normative and non-normative remembering, or because it "lumps them into the operation of a single constructive memory system", it is in effect unable to distinguish between them. We have already argued that Robins' argument fails because it overlooks the fact that simulationism is able to appeal to the accuracy condition and the reliability condition in order to distinguish between successful and unsuccessful remembering. Here, we simply point out that Craver's argument, on this reading, fails for the same reason: the empirical view can help itself to the distinction between accurate memories and inaccurate memories, and it is free to invoke reliability (or another factor) in order to distinguish among different forms of non-normative remembering (e.g., confabulating and misremembering).

On another reading, Craver's claim is not just that the empirical view fails to distinguish between normative and non-normative remembering but that it is bound to do so, for, in order to "reduce" epistemic to empirical remembering, "one would have to derive a theory of competence from a theory of performance" (271), which, he suggests, cannot be done. But regardless of what Chomsky might have thought about the competence/performance distinction when he introduced it in linguistics, there is no obvious reason why an account of competence might not be derived from an investigation of performance. Indeed, many approaches in linguistics attempt to do precisely that (Scholz et al. 2020). As in the domain of language, so in the domain of memory: there is no obvious reason why an account of memory competence—i.e., a statement of the conditions on successful remembering—might not be derived from an investigation of memory performance, including the investigations the results of which inspire the simulationist account of successful remembering. ), in particular, argues that those investigations support an account on which successful remembering requires accuracy and reliability. The idea, in brief, is that the function of the episodic construction system—roughly, to produce representations of the events of the personal past and future—can be determined empirically, on the basis of research on mental time travel and on phenomena such as confabulation. That function, in turn, determines the conditions on successful remembering, namely, accuracy and reliability.<sup>28</sup> Michaelian's argument might or might not succeed; our point here is merely that there is no in-principle barrier to the success of any such argument.

It might be objected that there is indeed an in-principle barrier here: the argument attempts to establish a purely descriptive account of the conditions on successful remembering, but there can be no such account, for a purely descriptive treatment of remembering can never tell us what degree of accuracy or what level of reliability

<sup>28</sup> Remembering in healthy subjects mostly produces representations of events that did occur, whereas remembering in confabulators mostly produces representations of events that did not occur. In other words, remembering in healthy subjects is characterized by accuracy and reliability, whereas remembering in unhealthy subjects is characterized by inaccuracy and unreliability.



is required for successful remembering.<sup>29</sup> In reply, we point out that the derivation of requirements for success on the basis of purely descriptive investigations of the functions of mechanisms is generally considered to be possible in a variety of other domains. The function of the salivary glands, to give just one example from a domain largely unrelated to that of memory, is to produce certain quantities of saliva of a certain composition. Salivary glands that produce more or less saliva or that produce saliva of the wrong composition do not function properly, giving rise to unsuccessful salivation. Similarly, the function of the episodic construction system is to produce representations of certain events that are accurate in certain respects. An episodic construction system that fails to produce representations of the relevant events or that fails to produce representations that are accurate in the relevant respects does not function properly, giving rise to unsuccessful remembering. There is, we grant, room for scepticism about this sort of derivation. But, to the extent that such scepticism is a problem, it is a highly general problem, affecting many different approaches to many different domains, not only the simulationist approach to memory, and we will therefore make no attempt to address it here.

Craver argues, second, that, because “[o]ne cannot begin to study memory systems experimentally... without controlling for inappropriate solutions to memory tasks”, and because “[s]uch controls require a factive notion of memory”, the empirical view presupposes the epistemic view. It follows, he argues, that

the memory empiricist is not free to jettison the normative theory; it is the basis for their research domains, their study designs, and for the very concept of an apparent memory. The science of memory presupposes and so cannot eliminate the distinction between veridical and non-veridical remembering. (275-276)

The problem with this line of reasoning is that it runs together two concepts that ought to be kept distinct, the concept of *accuracy* (or veridicality) and that of *factivity*. It is one thing to say that the empirical science of memory—and the descriptive perspective more generally—presupposes a distinction between accurate and inaccurate memory. It is quite another to say that it presupposes that memory is factive—i.e., that it is *necessarily* accurate.

Consider an example offered by Craver himself, that of Ebbinghaus’s research on the ability to retain nonsense syllables. This research, as Craver points out, presupposed a distinction “between correct and incorrect remembering”. Without such a distinction, Ebbinghaus would have been unable to determine in which cases a syllable had successfully been retained. Thus *successful* memory, for Ebbinghaus, was accurate. But if he were to have supposed that memory as such is necessarily accurate, he would have had no reason to group together cases of correct and incorrect remembering; indeed, the notion of incorrect or unsuccessful remembering would simply have been incoherent. Thus *memory*, for Ebbinghaus, was not factive. In general, empirical memory research does indeed presuppose a distinction between accurate and inaccurate memory, but it does not presuppose that memory is factive.

<sup>29</sup> Thanks to an anonymous referee for pressing us on this issue.



Since the concept of accuracy is not specific to the epistemic view, Craver's argument for the claim that the empirical view presupposes the epistemic view fails.<sup>30</sup>

We conclude that Craver's position is overly optimistic both with respect to the compatibility of the epistemic/normative perspective with the empirical/descriptive perspective and with respect to the priority of the epistemic/normative perspective.

## 6 Conclusion: The Legitimacy of the Normative and Descriptive Perspectives

By way of conclusion, we respond to two objections to our argument.

It might be objected, first, that, though we have attempted to argue that both causalism and simulationism are legitimate, our argument fails to establish this, since the perspectives with respect to which those theories are respectively to be preferred are ultimately not perspectives on the same thing.<sup>31</sup> The normative perspective, we have said, is concerned with the standards that the subject needs to meet in order to be able legitimately to claim to remember, while the descriptive perspective is concerned with the nature and workings of the capacity that may or may not enable him to meet those standards. The thought is that, if this is right, then what one means when one says, adopting the normative perspective, that a subject remembers is that his apparent memory meets certain standards, whereas what one means when one says, adopting the descriptive perspective, that a subject remembers is that his apparent memory is the product of a certain capacity. If we are right in claiming that causalism aligns with the normative perspective and that simulationism aligns with the descriptive perspective, this implies that our argument fails to show that causalism and simulationism are legitimate in the same sense—that it shows instead that causalists and simulationists are simply speaking past each other.

In reply, we acknowledge that our argument does indeed fail to show that causalism and simulationism are legitimate in the same sense. We point out, however, that the argument is not designed to show that they are legitimate in the same sense. Causalism, we have argued, is legitimate to the extent that one is concerned with the standards that the subject needs to meet in order to be able legitimately to claim to remember; simulationism, in contrast, is legitimate to the extent that one is concerned with the nature and workings of the capacity that may or may not enable him to meet those standards. One cannot have it both ways: as long as one is concerned with memory as a source of knowledge, one cannot coherently endorse both causalism and simulationism, since the former requires appropriate causation and the latter does not; for the same reason, one cannot coherently endorse causalism and

<sup>30</sup> Although this is not entirely clear in his paper, Craver might be read more sympathetically as invoking a distinction between memory as a process and memory as a state. The idea would be that memory as a process is not factive: the memory process generates representations, only some of which are true and accurate. Memory as a state, in contrast, is factive: if we label a particular state generated by the memory process as a "memory", then this state is necessarily true or accurate; if it is not true or accurate, then it does not merit the label "memory".

<sup>31</sup> Thanks to an anonymous reviewer for suggesting this objection.

simulationism as long as one conceives of memory as an object of knowledge. We point out, moreover, that, though it is convenient to describe our view in terms of its consequences for what one “means” when one “says” that a subject remembers, this should not be taken to suggest a parallel between our view and contextualist views in epistemology. Views of the latter sort do literally concern what one means when one says that a subject knows, focusing on how the truth conditions for sentences of the form “S knows that P” become more or less demanding relative to different linguistic contexts. In contrast, our view, strictly speaking, concerns the appropriateness of different theories of memory, focusing not on truth conditions for sentences of the form “S remembers e” but rather on how different theories may be appropriate relative to different explanatory contexts.

It might be objected, second, that, though we have attempted to argue that both causalism and simulationism are legitimate, our argument in fact implies that STM is ultimately right, since STM is preferable to CTM from the descriptive perspective, and since—to the extent that we are interested in understanding memory itself—the descriptive perspective is preferable to the normative perspective.

In reply, we acknowledge that our argument does indeed imply that, to the extent that we are interested in understanding memory itself, STM is—assuming that we are right that it aligns best with the descriptive perspective—to be preferred. We point out, however, that this does not imply that CTM is illegitimate. There may be a sense in which the descriptive perspective is privileged. Though we tend to adopt the descriptive perspective on memory in psychological contexts and the normative perspective in, for example, courtroom contexts, we can also adopt the descriptive perspective on memory in courtroom contexts; that is, we can attempt to understand, from a descriptive perspective, how memory works in courtroom contexts. We may even argue, on that basis, that the way that memory is treated in those contexts ought to be modified (e.g., Loftus, 1996). It would, of course, be absurd to attempt to move in the other direction, arguing that the way that memory is treated in courtroom contexts suggests that the way that it is understood in psychological contexts ought to be modified. But there is also a sense in which the normative perspective is privileged: it is this perspective that we adopt when we are concerned with what subjects claim when they claim to remember. And CTM is preferable to STM as an articulation of the standards governing memory claims: it would, again, be absurd to reply, when one’s claim to remember is challenged by an opponent who points out that the event that one claims to remember did not occur or that one now knows about it only because one was told about it after that fact, that memory requires neither accuracy nor appropriate causation. We thus take ourselves to have shown that there an important sense in which we need not choose between causalism and simulationism.

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