Remembering: Epistemic and Empirical

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Abstract

The construct "remembering" is equivocal between an epistemic sense, denoting a distinctive ground for knowledge, and empirical sense, denoting the typical behavior of a neurocognitive mechanism. Because the same kind of equivocation arises for other psychologistic terms (such as believe, decide, know, judge, decide, infer and reason), the effort to spot and remedy the confusion in the case of remembering might prove generally instructive. The failure to allow these two senses of remembering equal play in their respective domains leads, I argue, to unnecessary confusion about memory externalism, the possibility of episodic memory in non-human species, and the thesis of memory continuism. By distinguishing these equivocal senses of remembering, we thus gain leverage on understanding how the distinctive epistemic norms that define many of our psychologic terms are more plausibly related to the capacities studied by empirical science, given that neither identity nor elimination are possible.

1 Parallel Languages

The effort to unify philosophical and scientific theories of remembering is hampered by the fact that "remember" is used in distinct intellectual contexts to describe altogether different sorts of phenomena. These senses of remembering are designed to serve different theoretical and instrumental objectives. They have apparently opposite

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commitments. Yet I'll argue these senses of what remembering is are neither in competition nor in tension with one another; there is no intellectual requirement that the forces molding the contours of the concept in one domain must be responsive to the forces molding the contours of the concept in the other. If we give up the idea that these views—one *empirical*, describing bio-psychological capacities and their mechanisms; the other *epistemic*, declaring an achievement, a success, in the effort know the past[1]— must either refer to the same thing (as the reductionist would have it) or be in competition with one another (as elminitavists hold), we might begin to sketch an alternative vision for how these two conceptions are related. The cost of failing to mark this intellectual divide is continued equivocation at the nexus of mind and matter.

In fact, the equivocation between the empirical and epistemic is not unique to discussions of remembering but infects a raft of terms at least doubly enlisted in distinct intellectual projects. Believe, explain, know, infer, represent, see, and understand, for example, all have empirical and epistemic senses of the sort described here. Viewed from the standpoint of empirical science and the mechanistic norms of theory development (e.g., Craver 2007), it seems the intellectual choice we confront in each case is between reducing the epistemic notion to the empirical or, failing such reduction, jettisoning the epistemic construct as pretheoretic folk theory, or philosophy in the worst sense.

Once the difference between these ways of using "remember" is acknowledged, however, it's clear both that and why epistemic remembering is not even plausibly reductively explained by empirical remembering. The thought that such a reduction is desirable and, correlatively, that the impossibility of reduction is problematic for the epistemic conception, rests on the failure to see that they need not be brought into registration with one another to earn their conceptual keep. These are languages in parallel, and the drive to speak them with one voice only muddles the message about how the mind is situated in the causal structure of things. An adequate language would have to provide the resources for an impossible task: deriving a normatively significant distinction from a reductive base described explicitly so as to fail to mark that very distinction. The problem thus articulated shares key elements with other inference barriers discussed in philosophy, such as the projection of future patterns from the past and, perhaps more aptly, the derivation of what ought to be the case from what is, in fact, the case (Restall and Russell 2010; Pigden 2010).

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[1] These words, empirical and epistemic, should not be given undue exegetical weight, especially the latter. I chose them as a satisficing gesture toward the set of practices and norms in terms of which these senses of remembering are understood. I do not mean to suggest, falsely, that all and only epistemologists have the epistemic view. I resisted casting the distinction as between philosophical versus scientific views precisely because the dominant view in the philosophy of memory these days is the empirical view. I might have described it as normative versus empirical, but norms in some sense are involved in the empirical as well, as explained below. I might have correctly described the epistemic as factive, but the epistemic as I envision it is more than a claim to factivity but an assertion of epistemic privilege. I might have described it as illocutionary, though I leave it open whether non-linguistic creatures epistemically remember. The contrast is emphatically not between an ordinary use of the concept and a technical one, as both senses under discussion here are perfectly ordinary and marked in everyday speech: "I remember putting my cameo in the drawer, but I guess I might have put it on the shelf" expresses an empirical sense; "But remember, Petty Larceny won in the eighth, so the jockey couldn't have been in the shop then" expresses the epistemic sense. They are also both deployed in technical contexts (in a laboratory or a court of law, respectively) in ways that admit of and benefit from careful analysis and delimitation.

My goals are to call attention to these two ways of thinking about remembering, to highlight their differences, and to show that each plays a useful role in a different intellectual project. It is easy to see why these views should appear to be in conflict. One, the epistemic approach, defines remembering such that remembering is necessarily a matter of *knowing* something about the *past* and representing it *correctly*, as it was, and not as it seems now to have been (see Bernecker 2010 for a list of 26 authors, from Annas to Zemack, who embrace the view). The other, empirical view, defines memory both as a *fallible* capacity and as a capacity that might be directed at the *future* or at *counterfactual* possibilities (see De Brigard 2014 for a review), not exclusively at the past.

This appearance of conflict finds its way into theoretical discussions of the ontology of memory, particularly debates about whether memory is "continuous with" imagining and, correlatively, about whether memory is essentially oriented toward the past. The contemporary science of memory, some argue, has shown that remembering the personal past, imagining the personal future, and imagining the personal counterfactual past are all really just different modes of operation in a mental time travel mechanism that serves as the core of all three (Michaelian 2016) and perhaps more (Buckner and Carroll 2007; De Brigard 2014). But should these empirical findings force a revision in the epistemic concept of remembering?

If the diagnosis presented here is correct, the term "remember" is deployed for different intellectual purposes in those contexts, and it is unproblematic that one should be led to lump them in one context and split them in another. The appearance of conflict is predicated on the idea that there must be a univocal answer to this question across empirical and epistemic projects. Fortunately, having separated these two perspectives, we can begin to articulate more perspicuously how empirical and epistemic remembering are related to one another. And as we'll see, this helps us to say some helpful and clear things about some perennial topics in the philosophy of memory, including the possibility of externalist semantic memory systems (Clark and Chalmers 1998) and the existence of episodic thought in non-human species (Clayton and Dickinson 1998).

I open with an admittedly crude analogy to the game of chess. Despite the apparent flaws of this comparison, it affords an antecedently intelligible model for thinking about a way that concepts can earn their keep without necessarily molding themselves to the constraints that drive mechanistic theory-building in the empirical sciences.

2 Normative and Empirical Chess

What is castling? We might take this as a normative question: How is castling defined in the rules of chess? The answer describes the right ways to castle: the permissible changes in board configuration (e.g., the white King moves two squares toward the Rook to g1, and the Rook moves to the King's opposite side at f1) and the conditions under which those changes are and are not permissible (e.g., only if the King hasn't moved, only if the King isn't in check, etc.). Castling, in this sense, is defined in terms of a move's place in the rules that together constitute the game of standard chess.

We might also take this as an empirical question: What changes in board configuration do people tend to execute under the name, "castling"? Of course, people sometimes castle "creatively"; they castle after they have moved the King, or they

move the King to f1 and the Rook to e1. Castling, as an empirical phenomenon, involves a range of moves, perhaps centering on a mean of normative castling, but exhibiting fuzzy variation. A chess empiricist might have a research program investigating the conditions under which players do and do not "castle," factors determining the different "forms" of castling, or perhaps the role of attention and other cues in determining whether someone castles (or allows castling) one way rather than another. There is nothing wrong with chess empiricism; even chess players have to be chess empiricists sometimes.

But there would be something wrong in thinking chess empiricism exhausts what can be said about castling. If you learn chess by mimicking the regularities observed when people in fact play "chess," you will learn to do things with some frequency that violate the rules. Technically, you will not be playing chess but some near-neighbor game, projecting typical past play onto future moves. The norms of proper play are crucial for understanding both what chess is and for explaining many regularities of empirical castling (e.g., why is normative castling the mode response?).

(I have been tempted in the past to construe the main distinction in this paper as one between normative (rather than epistemic) and empirical senses of castling (or remembering), but this is apt to cause confusion. Empirical castling, as I've described it, is a science of moves in a game. Presumably that theory would not cover movements of pieces caused by an errant table bump or a gust of wind. The idea of a "move", that is, is itself a normative notion, with success conditions that have to be satisfied to be a potential object of the empirical study of chess. So the contrast is not between something that is normative and something to which norms are foreign, but rather between different sets of norms, one enforcing a distinction between castling and illegitimate moves, and one that rests on the distinction between moves (i.e., movements chess pieces from one board position to another taken intentionally as part of a game of chess) and movements (changes in the location of a piece, moves included). There are satisfaction conditions in each case, but the satisfaction conditions do not align.)

What work is this comparison supposed to do? Surely, the rules of chess are more crisp and explicit than are the norms of epistemic remembering, to which we soon will turn, but this analogy suffices to make two points clear in, hopefully, a less controversial domain.

First, there is no reasonable hope of reducing normative chess to empirical chess. The domain of empirical chess[2] includes the domain of actual normative chess. But the space of potential normative chess games is far larger than the set of the actual chess games (past, present, and future). Further, the space of empirical "chess" (understood here to tolerate some slop) also includes a large domain of actual non-normative chess. This is why one cannot deductively read the rules of normative chess off actual chess performance; a further filtration of the non-normative from the normative games of chess requires something the empirical basis cannot provide. The contours of the rules of chess are not recoverable from the less restrictive contours of the "moves" of empirical chess: the latter do not contain the resources from which the former might be built. There is an inference barrier here resulting from the attempt to infer from something normatively weaker to something normatively stronger (see Russell 2010;

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[2] Apologies to Haugeland (1998), who uses this phrase for a different and unrelated phenomenon.

Pigden 2010). Normative chess describes proper chess play; empirical chess covers the many, many forms of playing around with pieces on a board.

Second, the would-be reductive base for normative castling presupposes, and so cannot ground, normative castling. The chess empiricist, in searching for regularities true of chess games must first have a means of identifying chess games. And the idea of normative castling is itself an indispensable benchmark in demarcating empirical castling: After all, which moves should count as apparent castlings (As opposed to, for example, a move involving the Bishop or a King alone)? The domain of phenomena appropriate for any scientific study of chess phenomena, including the distinction between succeeding and failing to castle correctly, depends on a prior understanding of the normative sense of chess. Further, instances of non-normative castling will show up as interesting to the chess empiricist precisely because they are close enough to normative castling to count as candidates and because they are moves that violate the rules. Failures exist as such only relative to a set of rules descriptive of normative play (beyond the rules that specify what is or is not to count as a move simpliciter).

Below I'll argue that "remembering", like castling, has a double life. To recognize this double life is not to give up on the scientific project of relating them but rather to change the kind of relation we should expect. If the chess analogy, crude as it is, can guide us in the messier case, it is by providing a clear model of intelligibility for seeing how two ways of describing one physical object (a board configuration) or event (the chess game) fit together. Making moves simpliciter is a means (in fact, a necessary means) for castling. Castling is a kind of move, after all, and so the capacity to make moves will figure in the explanation for how one can castle.[3] But it is only part of the explanation. And furthermore, the very idea of empirical castling comes into view as such once we have adopted the norms of castling as our touchstone.

3 Episodic Memory from the Epistemic Perspective: Assertoric Remembering

Reid (1785) described the "common acception of the word [memory]" as "an immediate knowledge of something past" (222). Normal Malcolm (1963) insists: "It is logically impossible that one should remember having seen X unless one saw it" (See also Shoemaker 1970; Audi 1995 and the twenty-six other authors listed in Bernecker 2010). Glossing over their differences, we can charitably see these authors as thinking of remembering roughly as chess normativists think of castling. They are interested in what it means for someone to truly (episodically) remember some past event, in contrast to confabulating it, seeming to remember it, relearning it, misremembering it, etc.[4] Their idea of memory is factive (necessarily true) because remembering thus characterized is an epistemic achievement, not merely the actualization of an empirical capacity. It is a success condition, what it means to remember something *truly*, versus seeming to remember it, imagining it, counterfactually

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[3] I allow below that one might normatively remember without empirically remembering in the way humans typically do.
[4] Sarah Robins explores the various constraints at work in this space and their interactions with philosophical theories of remembering in (Robins 2016a, 2016b, 2019)

representing it, and the like. These different attitudes have different success conditions: The conditions under which one correctly claims to remember an event E are distinct from the conditions under which one can correctly assert to have imagined event E or to have counterfactually supposed event E to have occurred.

The analogy between remembering and chess is clearest in contexts of remembrance where the stakes are high and the rules are clear, as they are in the witness box. To assert from the stand that one remembers an event is to stake a claim to facts about the past and about one's self. Enshrined in this context and practice is also the epistemic and illocutionary force such claims deliver: When one claims to remember some event E, one often asserts a distinctive epistemic privilege with respect to E and so asserts an entitlement to speak authoritatively on the basis of having experienced E for one's self. In this context (and also in ordinary contexts) failures of memory are taken as signs of unreliability. When Avi testifies in court that Bee removed the cameo from the drawer, he's undertaking commitments to truths about Bee, about the cameo, and about himself. Like the normative sense of castling, episodic remembering in this sense is an *epistemic* success: we truly remember an event only when we know things about it on the authority of having experienced it ourselves. Had Avi merely *seemed* to remember, knowing Avi, he would have withheld commitment about the event and committed only, for example, to having an experience as if remembering. In claiming merely to seem to remember, Avi would excuse himself from the epistemic commitments of remembering and, at the same time, strip himself of some or all of his entitlement to speak with the distinctive authority of a witness. The difference in play here is a difference in what Avi is and is not committed to and entitled to when he asserts in this committed sense that he remembers what Bee did.[5]

In chess, the conditions and consequences of castling are resolute and can be made succinctly explicit; for memory, we can only show by example the rough contours of the kind of commitment one undertakes in remembering and claiming to remember. Avi, for example, commits himself to facts about the past *entailed* by what he claims to remember. Bee's attorney will exploit these commitments in cross-examination. Was Avi even in the pawn shop? Or was he rather in the Finish Line Lounge, as the witnesses will show? Was he in a position to see things as they were, or was he rather, dear Jurors, on his third Gin Rickey by the time the supposed theft took place? These failure conditions expose the heart of the epistemic approach. Remembering, on these views, 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. In claiming to remember, Avi claims to have succeeded in this sense.

Seen in this light, those who insist on the veridical nature of remembering do so because they are interested in the place of remembering in our efforts to know things about the world. To claim to remember, as I'm spelling it out, is to stake a claim about the past, to hold that the event happened and that one experienced it first-hand. Remembering is, if not like castling, perhaps more like playing a trump card, a witness trump card, in the game of knowing about the past (Henry and Craver 2018; Mahr and Csibra 2017). From this angle, the idea of non-veridical memory is an oxymoron, like castling with your bishop. When you claim to remember episodically something that

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[5] The language here is borrowed from Brandom (1994).

did not happen or that you did not yourself experience, you are not merely remembering poorly; you aren't remembering at all.

I frame this notion of episodic remembering widely, in terms of the event itself, and not narrowly, in terms of the preservation of one's ability to recover one's past *experience* of the event. I do this to free the success conditions on remembering from any strong tie to the way one represents truths about the past in remembering. This is not required of an epistemic approach to remembering, but it serves the function here of making clear how one might be committed to a factive conception of remembering even while accepting that the empirical capacity of remembering is constructive. The construction might be merely a map or model of the event that preserves first-hand knowledge of the event using abstractions, idealizations, or whatever exotic representational device you like. If we demand of remembering that the experience one has in remembering preserves "what it is like" (an idea considered by Hoerl 2018), in some strong sense such as retaining a similar conscious experience as one had in the original scene, we risk demanding of epistemic remembering something it is most unlikely to deliver— an accurate reconstruction of what that phenomenal experience was like (see De Brigard 2014; In addition to the above, see McCarroll 2018 on observer-perspective memories, which cannot preserve what it was like but can nonetheless be the vehicle through which episodic memories are preserved). The epistemic commitments I sketch here should be entirely compatible with the constructivist consensus about empirical memory.[6]

Talk of a normative epistemic domain independent of the space of causes might raise suspicions that some fundamental tenet of naturalism must be breached to make space for it. No such violation is required. The norm of truth-telling about the past is not an impossibility but something most of us accept and enforce pretty well more or less all the time. That there are creatures in this world capable of generating norms for themselves and enforcing such norms in thought (addition, language, logic, politeness) and in social communication is utterly uncontroversial and easy enough to explain, at least in principle. Precisely how we have come to be creatures that regulate our epistemic conduct with respect to the past is surely a complex story. I will not pretend to tell it (see Jablonka 2017; Tomasello 2014, 2016).The very term "remember," and the idea of remembering, is itself under collective negotiation and is taught, often explicitly, in ontogenic development (e.g., Reese 2002); parents shape childrens' ability to construct past events into narratives through ongoing, guided efforts at joint remembering (Nelson and Fivush 2004; Fivush 2011). Parents teach children when it is and is not appropriate to use the term "remember," and they do so in ways that preserve the idea that we use the term "remember" to indicate retained first-hand knowledge of things no longer present.

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[6] Unlike the causal theory of memory (Martin and Deutscher 1966), an epistemic theory need not require that the event as represented now is sufficiently similar to the event as experienced then. One might argue that the causal requirement in the causal theory is an unnecessary empirical contamination from the epistemic stance, one that sends us searching for a well-identified engram encoding the past. Success in remembering might, as an empirical matter of fact, require such a causal structure, and tracing that causal structure might therefore be crucial evidence concerning whether one does or does not remember (drinks at the lounge, pressure at testimony from the gang, or improper interrogation techniques), but success in remembering can be specified completely without mentioning the word cause or appeal to a trace, for that matter, though these may be empirically necessary. The relationship between this commitment-based view and the causal theory requires an extended treatment of its own.

(Interestingly, the norms governing our claims to remember are established not by pointing to the inner, private experience of the rememberer. When we correct a child's use of "remember," we do not do so by asking them to evaluate whether they are having the appropriate sort of inner representational experience. We correct them with respect to the event itself: Did it happen? Did it happen to you? Were we really there? (Reese 2002). The norms of remembering as they are taught to us in this normative domain do not govern the form of the internal representation that is the focus of so much contemporary episodic memory research.[7])

Epistemic norms of remembering guide our individual actions—memories of our plans, what we've already said, and where we parked the bike or left our keys— designating some things as known and relatively closed off to further doubt because we just saw them or we heard them ourselves. Norms regulating truth-telling about the past are also important in social settings precisely because the "mechanisms" governing social interactions in the here and now often are hidden in the past (Mahr and Csibra 2017; 2019). This is most obvious in the case of agreements such as consenting, exchanging, and promising (Craver and Rosenbaum 2018). It is also clearly involved in choosing reliable partners and understanding the dynamics of a faculty meeting.

There is nothing wrong with building a theory of memory to fit the work that claims to remember (and rememberings themselves) do in an economy of knowing; in fact, there is no alternative if one wants a theory of the success conditions on remembering as an epistemic achievement, one that honors (indeed centers) the distinction between remembering proper and seeming but failing to remember. But there is something wrong with assuming that the epistemic approach exhausts what can be said about remembering. Surely it is reasonable to ask how creatures in our world manage sometimes to satisfy those success conditions, and this plausibly requires learning the empirical details of how they remember things.

4 Episodic Memory from the Empirical Perspective: The Capacity to Remember

And this is precisely the task of the memory empiricist. The empiricist treats remembering as a psychological capacity and seeks to reveal its underlying mechanisms, systems, and processes.[8] That capacity can be characterized by describing regularities involving its inputs and outputs, its modulating conditions, and the conditions under which it fails or falters. It might also be described by reference to the paradigmatic tasks used to elicit it; episodic memory, for example, has been measured with word lists, cued event recall tests, and artificial police lineups.

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[7] The remember/know distinction tracks inner experience thought to correlate with the difference between episodic and semantic memory, but not the distinction between remembering and seeming to remember. Secondly, I allow that norms of remembering can vary across times and cultures, embedding remembering and claims to remember in a different set of commitments and entitlements. This would make a fantastically interesting study. Finally, Philosophers of memory have tended to be interested in epistemology. Sue Campbell (2014) argues rightly that there are normative dimensions of remembering beyond truth; the norms of remembering emotions also deserve full exploration.

[8] See Roediger et al. 1990.

Accuracy can be key dependent variable in memory experiments, as we'll see below. However, entire research programs have been and are dedicated to the study of false memories, illusions of memory, and memory distortions. It is no exaggeration to claim that constructivism is a central dogma of contemporary memory science: episodic memory is a constructive mechanism that generates memory errors because the system was fundamentally devised to serve a more general function: to construct non-occurrent scenes and events and to populate them with rich detail. Memory is not fundamentally a recorder of the past or a rumination device; it is a "Mental Time Travel" system designed to assemble models of past, present and counterfactual events. These models are constructed to serve current needs, not necessarily to faithfully depict the past (Schacter and Addis 2007; Suddendorf and Corballis 2007; Hassabis et al. 2007; Boyer 2008). Some key findings in this research program help to bring out the core commitments of the empirical perspective and ground our later discussion of the epistemic presuppositions of memory science.

Ebbinghaus (1885), arguably the first experimental psychologist, approached memory as a fallible capacity constituted by both successes and failures. He used lists of nonsense syllables (e.g., wub, diz, and zad) to study patterns of retention and forgetting. For example, he described both the primacy effect, the tendency to remember early items on the list better than middle items, and the recency effect, the tendency to remember the last items on the list better than middle items. Both empirical effects are defined as patterns of remembering and forgetting characteristic of the human memory system, with an eye to characterizing the conditions under which memory succeeds and fails.

Bartlett's (1932) "War of the Ghosts" experiments are often cited as the source of the constructivist consensus in memory science. Bartlett presented subjects with an unfamiliar folk story and, after some delay, asked them to repeat it. Subjects tended to align the story to their own cultural context, omitting culturally irrelevant details, embellishing emotional reactions, and introducing added detail from the subject's own cultural experience. Memory, Bartlett concluded, should not be thought of as storing or recording the past but, at least in addition, as an "active" system for "reconstruction."

Elizabeth Loftus (Loftus and Palmer 1974; Loftus et al. 1978; Loftus and Pickrell 1995) showed it is relatively easy, using only leading questions and visualization techniques, to implant false memories in human subjects, e.g., false memories of an automobile accident or being lost in a mall. Studying how memory can be gamed, she argued, provides crucial insights into how it works. Importantly, the construction process is heavily influenced by current task demands, such as the questions and other techniques one uses to elicit the memories. Bee's lawyer is also mindful of this fact.

She is also briefed on many forms of memory failure and illusion. Perhaps the most studied example is the memory illusion first discovered by Deese (1959) and rediscovered by Roediger and McDermott (Roediger and McDermott 1995). In this task, subjects are presented with a list of semantically related words: ball, goalie, umpire, striker, foul, pitch, corner, dive. After a distractor task, they are then presented with a second list of words, some of which were on the original list and some of which were not. Among those that were not in the original list, some (the lures) are in the same semantic category as the words in the studied list (e.g., center, goal). Subjects are then

asked which items they remember from the original list. The central finding is that people follow lures. From an empirical perspective, the regularities on display in memory failures are every bit as revealing about how the underlying mechanism (or process) works, as are its successes. These findings, for example, have been taken to support "spreading activation" models of memory; the studied words are linked in a semantic network; activating many nodes in such a network promotes "spreading activation" to semantically related nodes; and this spreading activation produces the illusion one has seen the word before.

These findings sample the evidence supporting the core consensus that empirical remembering is a fallible, constructive process. Episodic memory is not a storehouse, vault, video-tape, or computer memory. Rather, memories are representations constructed in the here and now. They are aimed at generating adaptive future behavior (Atance and O'Neill 2001; Schacter and Addis 2007; Suddendorf and Corballis 2007) not reconstructing the past in faithful detail.

This hypothesis has been bolstered by the discovery that individuals with episodic amnesia typically also have associated deficits in the ability to construct events in their personal futures. The mechanism is a system for simulating (cf. Kurby and Zacks 2008; De Brigard and Gessel 2016), one that might be used to simulate events past, present, or future, and even from different interpersonal and spatial perspectives (Buckner and Carroll 2014). Whether the mental representation is directed at the past, the present or the future is irrelevant to their core psychological essence as a construction device (e.g., Michaelian 2016; De Brigard 2014). In claiming to remember, the empiricist will be tempted to say, Avi is saying that he has constructed a representation of Bee's activities that day and located it in his personal past. The same scene might have been constructed in the future or in a counterfactual past (De Brigard 2014). This, as I understand it, is the view embraced by "continuists," those who hold that there is no fundamental difference between remembering, imagining, and (in some cases) constructing counterfactual pasts. The primary difference, on their view, is extrinsic; true or false, the system just generates representations. The goal of the empiricist is to understand how it does that, how that capacity can be manipulated, and how it can break down.

Of course, this is just the way Bee's lawyers want the jury to start thinking: Memory is a fallible constructive device. So well-known are the frailties of human memory that the scientifically minded have come to view the factive, epistemic view as at best a quaint, ancient, philosopher's idea, with only a dim resemblance to real human memory. In the wild, memory is at best a satisficing kludge that helped us survive to reproduce (De Brigard 2014; Michaelian 2016). To define away memory failure is to blind one's self to the full reality of remembering and, at the same time, to obscure the ugly truth about witnesses.

5 The Irreducibility of Epistemic Remembering to Empirical Remembering

It is easy to see this situation in adversarial terms. Two groups lay claim to the term, memory, but each uses it differently from the other. One treats memory as necessarily veridical; the other emphasizes its failures. I argue now that epistemic remembering is

irreducible to empirical remembering in just the sense that normative chess is irreducible to empirical chess.

Epistemic remembering is defined in terms of success conditions for delivering truths about the experiential past. These conditions themselves gain meaning within a practice of tracking what we know about the world and how we know it. We learned the rules for trafficking in this kind of language from the people who raised us, and these rules form a crucial part of our cultural inheritance (Fivush 2011; Harley and Reese 1999; Reese 2002). Just as we can understand castling in terms of the conditions under which one is permitted to castle and the commitments one undertakes in doing so (constraints on future movements), so we can understand normative memory as constituted by a set of relationships between the remembering individual and the way things were in their personal history, as enforced in the social practices of tracing certain beliefs to their origins in first person experience.

The norms governing normative remembering are different in kind from the details of the empirical capacity to construct scenes, images, or simulations of events. These epistemic success conditions are not included in or derivable from the facts governing the behavior of empirical memory mechanisms (about inputs, outuputs, modulating conditions). 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. No theory that treats normative and non-normative remembering as equivalent includes or entails the epistemic rules of remembering (versus seeming to remember). Though empirical remembering includes all the actual cases of epistemic remembering, they are thoroughly mixed up with the non-normative instances of remembering. The empirical theory of remembering, that is, does not contain within its conception of memory the resources to distinguish normative from non-normative remembering in this epistemic sense.[9]

In fact, it is a kind of category mistake to suppose it would. To reduce epistemic remembering to empirical remembering, one would have to derive a theory of competence from a theory of performance. But to do so is to cross an inferential barrier as steep as any that philosophy offers (Restall and Russell 2010). I will not argue that the barrier cannot generally be crossed. But to equate epistemic and empirical memory is like equating the rules of chess with regularities in chess behavior. The regularities of chess behavior are not just partially incorrect descriptions of the former; they are descriptions of an altogether different sort.

Once we put it this way, it's clear that remembering, in the epistemic sense, involves a great deal more apparatus than, for example, the ability to generate scenes and locate them in time and space. It involves the conceptually rich capacity to undertake commitments about how things were earlier. If this is the right diagnosis of why empiricists and normativists should appear to be at such an impasse, then we are not dealing here with two descriptions of the same thing (as reductionist and eleminativists both require) but descriptions of two different things, empirical and epistemic remembering, which are as different as the rules of chess are from the regularities of ordinary chess-play. These are elements in different projects: one aims at characterizing the

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[9] This is so even if there are success conditions in both cases. The empirical memory capacity, the capacity to construct sense, let's say, is something that might fail for one reason or another. One might be unable to generate details, for example. Or one might fail to bind those details into a coherent whole (see Keven 2018).

human memory capacity and situating it in the causal structure of the world, and the other aims at understanding how (or whether) knowledge of the world is grounded in experience. The failure to reduce epistemic to empirical remembering is not threatening; the perspectives don't compete for the same territory.

6 The Mechanistic Dependence of (Most) Epistemic Remembering on Empirical Remembering

Though it seems clear that assertoric, epistemic remembering cannot be reduced to empirical remembering, it is also clear that the ability to remember factively depends upon the existence of creatures capable of empirically remembering (somehow) in the first place. It is because the world contains creatures capable of generating scenes or event models and locating them in a personal past, for example, that the world contains creatures that might reasonably be measured against norms of factive remembering and that might begin to enforce in themselves and in one others the proper use of memories and claims to remember.

Phylogenetically, the empirical capacity to reconstruct past events must predate the appearance of norms governing truth-telling about the past. It would seem the norms in question would only become salient in light of at least some rudimentary empirical capacity (again, see Jablonka 2016). Ontogenically as well, the capacity to regiment one's memories about the past as such emerges only when one begins thinking in terms of past experiences and events and enters the community practice of using what one "remembers", "plans," "sees," and "imagines" in different ways (Reese 2002). Much of the mundane work the episodic memory system does for us— remembering where we parked or who came to the meeting, etc.— relies on the operation of the scene construction system at the heart of empirical remembering. The capacity empirically to remember is, at least in these standard cases of human remembering, *part of* the mechanistic explanation for how remembering in the epistemic sense occurred. But as noted above, it also requires additional capacities necessary to form commitments about non-occurrent events and to acquire, evaluate, justify, and propagate norms of truth-telling (or true-believing) about the past and one's self. This would appear to require an at least tacit recognition of the place of memory claims in an economy of knowing: i.e., that in taking one's self to remember in this assertoric sense, one stakes a claim about the past.

So although assertoric, epistemic remembering is irreducible to empirical remembering, many cases of epistemic remembering are achieved using the human empirical memory system. Empirical memory, the ability to generate scenes and locate them in one's personal past, is a component in a more elaborate system that allows us to be the sorts of norm-governed creatures capable of remembering in the sense of holding truths about non-occurrent events on the authority of first-hand experience. Empirical remembering is therefore a crucial part of the mechanistic explanation for how epistemic memory fits in the space of causes, but not the whole story.

The key point to notice, however, is that if we allow these two senses of remembering their separate domains, there is no longer any pressure to insist that the concept in one domain must be identified with the concept in the other (or suffer elimination). Below, I argue that this very pressure lies at the heart of the defense of "continuism",

the empirically inspired idea that remembering and imagining are not fundamentally distinct psychological kinds. My point is that the concept of "remembering" in one domain need not be responsive to the evidential forces that drive conceptual revision in the other.

Before returning to the question of how these two conceptions are related to one another, I want to show how separating these concepts and the domains in which they gain their meaning can help to shed light on some more familiar philosophical puzzles. Diving into these examples should also help to cinch the antireductionist case above by showing that empirical memory is neither necessary nor sufficient for epistemic memory.

7 Externalism: Epistemic and Empirical

We have up to now considered the case of episodic remembering, but similar equivocation has arisen in philosophical discussions of the nature of semantic remembering and, in particular, whether semantic remembering amounts simply to the retention of knowledge over time. Consider how this epistemic conception of semantic memory functions in the now-familiar case of Otto, who uses his phone to guide him in lieu of his failed memory. Clark and Chalmers (1998) argue that Otto should count as remembering how to get to the MOMA just as much as Inga, who just remembers how to get to the MOMA in the old fashioned way; the fact that Otto offloads a portion of that task to his handheld, they, makes no difference to his remembering how to get to the MoMA. The path to agreement here is easy for those who embrace an epistemic view. Knowledge can be retained by many kinds of system besides the human semantic memory system, including handhelds, maps and street signs.[10]

Those who embrace memory empiricism, however, are likely to balk at Clark and Chalmers' proposed lumping hypothesis. They are, after all, interested in studying the "typical" human semantic memory system, its characteristic inputs, outputs, modulating conditions, and failure conditions. It is a violation of Ebbinghaus' experimental setup if the subject photographs the study list. It contravenes Loftus' experiments if one videotapes the accident. So while one might make an empirical study of human mnemonic tool use, one is clearly studying something with very different inputs, outputs, failure conditions, and underlying mechanisms in doing so. The empiricist rightly distinguishes different human memory system by differences in the underlying mechanism. Unaided human semantic memory and handhelds have different inputs and outputs, they are wired differently, they break down in different contexts, they show different characteristic errors and rates of decay, and they respond differently to a jog on a humid day, in my experience. Otto and Inga, one can easily say, both satisfy the normative conditions on epistemic remembering, but they do so differently. Only Inga uses the empirical phenomenon of human semantic memory. So perhaps the right thing to say is that they both remember, in the sense that they satisfy the success conditions

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[10] This philosophical thought experiment is no mere idle curiosity to individuals with memory impairments who might hope to scaffold the epistemic functions threatened by their impairments with the use of external devices. In some cases, handheld devices make a qualitative difference to the kinds of life these people, in the fullest sense, can lead (see Craver and Rosenbaum 2018).

on semantic remembering, but only Inga remembers empirically (in the typical human sense). We can give different answers in these two domains.

Might these fanciful thoughts be stretched to episodic memory? Might there be ways of preserving first-hand knowledge of the past without episodic memory? Audiotapes and CCTV often play the role of memory, literally recording the experienced environment during an event. Perhaps Avi's memory might be checked against Evaline's in-store cameras. Suppose we accept that Evaline and Avi's tools both have preserve privileged first-hand knowledge about past events (which is hard to deny, deep fakes notwithstanding). Even so, this would not entail that the empirical construct of episodic remembering ought to be altered to include CCTV. As with Otto and Inga, one can follow Clark and Chalmers in lumping the epistemic construct but splitting the empirical construct due to the obvious mechanistic differences. The epistemic construct is not molded by the same forces shaping the empirical construct.

8 Empirical Remembering As Just One Component in Epistemic Remembering

As mentioned above, the kind of assertoric commitment central to the normative account of remembering requires the operation of a scene construction mechanism but, more importantly, its operation in the context of a system capable of regimenting its thoughts with respect to the world and its past via personal experience. Memory takes on assertoric, committed significance when it is built into a system for maintaining and transmitting knowledge about the way things are (and were). The mere presence of scene construction, or what-where-when information, or self-place-time information (cf. Clayton and Dickinson 1998) in the absence of the ability to undertake commitments about one's past is just the presence of the empirical core of remembering without the kinds of norm-generating and norm-enforcing practices required to have anything resembling epistemic remembering, forgetting, or generally of telling truths about the world.

Which organisms have these capacities, I don't know; but the mere presence of empirical episodic memory (i.e., scene construction, etc.) in the absence of that normative surround lacks the committed, "assertoric" force of epistemic remembering, even if it functions well in guiding some behaviors, such as the search for food. Scene construction alone lacks the resources to play a role in the very conception that one's ideas originated in personal experience. While it is interesting to establish the reach of scene construction among non-human animals, it is also interesting to establish the reach among non-humans of the idea that beliefs can be regimented by anchoring them to things known first-hand. Empirical remembering is not sufficient for epistemic remembering.

Consider the same matter, but now from the point of view of individuals with deficits in episodic memory, such as K.C. (Rosenbaum et al. 2005) and Jon (Vargha-Khadem et al. 1997). One might lose the capacity to construct scenes and scenarios from one's personal past and nonetheless retain much of one's understanding of time, the past, and the way one's life fits into both (Craver et al. 2014). Individuals with episodic amnesia in many cases continue to make decisions and reason about practical (Kwan et al. 2012; Kwan et al. 2013) and moral choices (Keven 2016) that are

indistinguishable from those of controls. Just as scene construction takes on a rather different character in light of those surrounding capacities than it has in their absence, life without scene construction might retain much of the epistemic practice within which empirical memory has come to play its crucial, foundational role in the economy of knowing (Craver and Rosenbaum 2018).

9 Epistemic Memory cannot Be Eliminated in Favor of Empirical Memory

I have argued that normative and episodic memory are distinct, that normative memory cannot be reduced to empirical memory and that, at least plausibly, empirical memory is neither necessary nor sufficient for epistemic remembering. In the empirical sciences, this situation is often met with calls for elimination: if the epistemic taxonomy of memory does not fit remembering as we discover it to be, then one should revise or eliminate the irreducible dangler (Schaffner 1993).

Tempting as this option may be to the empirically minded, it ignores the fact that the science of remembrance is itself framed by reference to the epistemic construct. The empirical project of understanding human memory could not, and surely would not, begin without the epistemic conception spotlighting the significance of the empirical phenomenon for human beings. The intellectual significance of remembering derives from the role it plays in our practical activities: regimenting knowledge of what happened, to whom, where, and when (in addition to finding our keys). The role of remembering in the context of these practices is the touchstone against which our scientific measures must be calibrated. Much as "feels warm" and "feels cool" grounded the study of heat (Chang 2004), the kind of remembering that happens on the witness stand is a crucial touchstone for saying what memory is.

As we have seen, experimental investigations of empirical memory commonly presuppose a distinction between remembering and failing to remember. One cannot begin to study memory systems experimentally, for example, without controlling for inappropriate solutions to memory tasks. Such controls require a factive notion of memory. Ebbinghaus' experiments would not be memory experiments if he allowed his subjects to snap a photo of the study list. Bartlett's War of the Ghost would not be a memory experiment if subjects could record the original story. In some cases, the distinction between success and failure is built into the protocols of the study itself. Ebbinghaus' primacy and recency effects, after all, are patterns in correct versus incorrect remembering. Bartlett was interested in how *faithfully* the stories were retold downstream. The DRM effect is defined in terms of the hit rate to *false* lures. These methods and measures presuppose the distinction between factive and non-factive remembering that the would-be eliminativist jettisons.

From the epistemic perspective, the empirical perspective inverts the relationship between apparent and factive remembering. The empiricist often thinks of factive memory as derivative from the core phenomenon (e.g., scene construction); memory is apparent memory (e.g., scene construction) *plus* veridicality (see Dokic 2014 on two-factor theories). From that perspective, the psychologist focuses on the psychologistic core (the generation of apparent memories) and leaves veridicality as extrinsic and irrelevant, determined by factors outside the mind's control. But from the epistemic

perspective, this is inverted: What makes a memory system a memory system (as opposed to merely a construction or counterfactual simulation system) is that it occasionally succeeds in delivering up veridical representations of the past when called upon to do so. Apparent but false memories are representations of the past that are like the representations of the past we experience when we actually remember. Apparent memories are imaginings that are like factive, assertoric rememberings. The capacity to have an apparent memory or to construct a counterfactual past, that is, presupposes the idea of having a veridical memory rather than the other way around.

So the memory empiricist is not free to jettison the epistemic theory; it is the basis for their research domain, for 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.

10 Are Memory and Imagining Continuous?

It is a most reasonable thought that scientific findings concerning remembering as an empirical phenomenon can force philosophers to revise the epistemic category of "remembering", bringing it into line with what we know.

In the scientific image of memory, the explanation for remembering spans multiple levels of organization (Craver 2007). Habituation in the Aplysia, for example, is partly explained at a behavioral level, a level of neural networks, a level of synapses, and a molecular level. Lower-level mechanisms are embedded in the higher-level mechanisms. From that perspective, it is a constitutive, regulative ideal that the different levels must "fit together"; a component in one level's mechanism is the phenomenon to be explained one level down (Craver 2007). What happens at the higher level must ultimately be the sort of thing that the lower-level mechanisms do (Piccinini and Craver 2011).[11] If the levels do not "fit together," they must be revised and readjusted until they do (Schaffner 1993). This mechanistic ideal of interlevel concept formation, roughly, that the empirical and causal regularities of remembering should be the basis for deciding when we split and when we lump, plays a crucial role in arguments for the thesis that episodic memory and imagination are "continuous," i.e., that they are not different in kind (Michalean et al. 2016; see especially Michaelian et al. Forthcoming).

Continuists hold that episodic memory just is the same capacity that allows humans to constructively simulate the future, the imaginary, and the counterfactual past (Schacter et al. 2012; Suddendorf and Corballis 2007; De Brigard 2014). As card-carrying empiricists, they "follow the lead of psychologists" (Michaelian 2016, 63) in believing that one and the same system is involved in episodically constructing the past and imagining the future (Atance and O'Neill 2001; Boyer 2008; Schacter and Addis 2007; Schacter et al. 2012; Tulving 1983; for a helpful review, see Klein 2013). They appeal to the neuroscientific evidence that these capacities are often impaired together in brain damage and psychiatric disorders (e.g., Hassabis et al. 2007) and that tasks engaging these capacities light up different regions on brain scans (Addis et al. 2007). They explicitly call upon the kind of mechanistic ideals described above: "from a

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[11] Piccinini and Craver (2011), for example, are clearly focused on the norms of empirical, not normative, concept revision.

naturalistic perspective, we should not draw distinctions between mental states or processes where none is to be found at the neurocognitive level" (Michalean 2016, 76). On these grounds, Michalean concludes that the idea that memory is factive is "scientifically untenable" (Michaelian 2016, 76); the science seems to indicate that remembering just is "reliably imagining the past." (see also Sant'Anna (2018)).

Michaelian et al. (Forthcoming) review critically a number of philosophical arguments against the continuist thesis, both as a thesis about what memory and imagining are (metaphysical continuity) and about the kind or strength of knowledge they make possible (epistemological continuity). For example, Debus (2008) defends a metaphysical distinction between memory and imagining on the basis of the fact that memories are causally connected to the events remembered whereas imaginings of the future or of counter-factual possibilities cannot be so causally connected. Alternatively, Borghini and Torrengo (2013) suggest a possible epistemological distinction between the two on the grounds that the past is determinate, and so fully knowable, while the future is not, and so is not so readily or completely knowable. On the view presented here, in contrast, the arguments for the continuity thesis involves the application of empirical criteria of concept formation to a distinct concept defined in terms of a different set of practices, namely, practices governing the preservation and transmission of truths. The distinction I draw is not in the causal entanglements or in the degree of epistemic access afforded by two distinct psychological capacities. Rather the difference lies in the epistemic entailments of remembering and how those differ from the epistemic entailments of imagining or constructing scenes.

The claim that remembering is factive should not be understood as an empirical thesis describing regularities characteristic the human episodic memory system or of its underlying mechanisms. The network of relations within which the epistemic conception embeds the memory concept, relations involved in tracking our veracity with respect to non-occurrent events, is not constituted by the kinds of causal relationships that constitute the episodic memory system; and the different nodes in that normative network (memory, self, past, yesterday, then, once, etc.) need not be individuated by finding the most natural joints in the causal structure of things. Again, our concept of remembering is learned as part of a set of social rules (analogous to the rules of chess, but more implicit) that regulate how our beliefs are related to how things are (or, in this case, were). Imagination plays a different role in that economy of knowing.

If we attend to the commitments one undertakes when one asserts to remember epistemically, or what is going on when one in fact remembers, the physiological, phenomenological, or mechanistic overlap among biological mechanisms is less important than the momentous differences in attitudinal stance one takes with respect to a past event in remembering as opposed to imagining. In remembering, one is committing to (believes) that one was there for the event, that one experienced the event one's self, and that one has on that basis of this contact a privileged knowledge of what happened. We have here a sharp *discontinuity of commitment* between memory and imagination.

These commitments about the event, the self, and past experiences are importantly lacking in imagination. If Avi claimed merely to be able to *imagine* watching Bee lift the cameo, whether in the past, the present, or the future, Bee and her lawyer would sleep easier. In that case, Avi no longer makes any claim about what happened. Nor

does he assert any reason why he should be trusted about Bee's theft more than someone else. The mechanisms by which Avi imagines Bee's theft may overlap with those he could use to remember it (as Nanay 2015 emphasizes), but the commitments undertaken in remembering are fundamentally different. To remember is to stake a claim about the past, to truths about the event, about the self, and about one's past experiences.

So my positive suggestion has two components. First, the "traditional view" (Michaelian et al. Forthcoming) that epistemic memory is factive does not compete with the view that empirical episodic memory is constructive. The network of relations within which epistemic memory is defined and regulated is distinct from the network of relations within which the empirical concept, framed with an eye to interlevel theory-building, must be framed. It is perhaps helpful here to follow Dennett in thinking of the epistemic and the empirical views of memory as different "stances" about remembering rather than as different levels of organization in a memory system, or, alternatively, as a clash between a "folk concept" and a scientific competitor. Just as nobody thinks the rules of chess should be eliminated because they fail to fit the facts of empirical chess, one is free to allow that the language of epistemic memory can legitimately be articulated in terms of the rules of a game of knowledge even if the same empirical memory system is also involved in imagining and planning. These are distinct ways of thinking about memory, developed for different purposes, and they are free to have their own contours.

11 Conclusion

When philosophy and psychology parted ways and came to inhabit different buildings, the disciplines continued using the same words, but for increasingly different purposes. The sort of equivocation one finds for "remembering" arises also for other key terms at the intersection of the epistemic and empirical: e.g., belief, inference, knowledge, representation, understanding, and planning. In each case, there is the danger of conflating a normative story about success conditions in an epistemic or practical aim with an empirical story about the mechanisms in virtue of which these aims are sometimes satisfied. Norm-governed and norm-wielding creatures, in the fullest sense of those terms, also wield their other cognitive capacities with newfound purpose and toward previously unimaginable ends. Recognizing these two aspects of our dual natures is a crucial step in constructing a synoptic view encompassing persons, cogitating in space of reasons, and their cognitive mechanisms, whirring in the space of causes (Sellars 1956).

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