

Memory

Philosophical interest in memory goes back to ancient Greece, and there have been discussions of memory throughout the history of philosophy (Nikulin 2015), but the philosophy of memory began to emerge as a field in its own right only a decade or so ago. Since then, however, the quantity of philosophical work on memory has exploded (Michaelian et al. 2025), and philosophers of memory now debate an impressive range of questions. This entry introduces those questions, referring to the historical literature (and to the empirical literatures with which philosophers of memory engage and by which they are often inspired) as appropriate but foregrounding the contemporary literature. Within the contemporary literature, the emphasis of the entry, in line with the emphasis of the field itself, is on philosophy of mind and adjacent areas. The entry therefore does not include sections devoted to areas such as the ethics or the epistemology of memory.¹ Ethical issues are discussed in connection with topics such as forgetting (section 4.2) and trauma (section 8.3). Epistemological issues are covered in a [dedicated entry](#) (see also Senor 2019; Frise 2026).

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¹ The emphasis of the entry is on philosophy of mind in analytic philosophy, in particular. While there are increasing interactions between analytic philosophers of memory and philosophers of memory hailing from other traditions, including Buddhism (e.g., Chadha 2023; Keng 2025), phenomenology (e.g., Bogotá 2025; Righetti forthcoming), and the Bergsonian tradition (e.g., Hara 2025; Hirai 2025), these are, for now, at an early stage.

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1. Kinds of memory

Philosophers have proposed a number of distinctions among kinds of memory. Bergson (1896/2004) and Russell (1921/2005) distinguished between habit memory and recollective memory, while Broad (1925/2014) and Furlong (1951) distinguished between recollective memory and propositional memory (cf. Ayer 1956; Locke 1971). Long influential, these distinctions have come largely to be replaced by a taxonomy of kinds of memory originally developed in psychology (De Brigard 2023). The standard psychological taxonomy divides memory into *declarative* and *nondeclarative* types and further divides declarative memory into *episodic* and *semantic* types, roughly corresponding to recollective memory (for example, remembering one’s first visit to Grenoble) and propositional memory (for example, remembering that Grenoble is in the Alps) (Squire 2009). Declarative memory, whether episodic or semantic, is defined in terms of the encoding, storage, and retrieval of information that can, at least in principle, be consciously accessed. Nondeclarative memory is defined in terms of the modification of behavior and thus need not involve conscious access to information.

Nondeclarative memory is an extremely broad category that includes phenomena such as skills and habits, conditioning, priming, perceptual learning, habituation, and sensitization. Due to its breadth, the unity of nondeclarative memory is much less certain than is that of declarative memory, and philosophers have largely been interested in the latter. They have been interested, first and foremost, in episodic memory, which is, accordingly, the main focus of this entry. There is, nevertheless, important philosophical work on procedural memory, a type of nondeclarative memory roughly corresponding to habit memory. This work is discussed in section 9, along with work on prospective and working memory, types of memory that do not figure in the standard taxonomy.

The standard taxonomy is empirically grounded and is thus in tune with the [naturalistic](#) spirit that has characterized philosophy of memory since the field first took shape (Robins 2022), but it faces two sets of challenges. The challenges in the first set bear on the episodic-semantic distinction. One challenge here concerns the scope of the distinction: while it is often applied not only to memory systems but also to retrieved memories, many retrieved “episodic” memories depend on interactions between the episodic and semantic systems, suggesting that the latter application is illegitimate (Pan 2022; Andonovski 2023). Another challenge concerns its vagueness (De Brigard et al. 2022): both semanticization, in which memory content shifts from episodic to semantic format over time (Aronowitz 2025), and the contributions of semantic memory to episodic memory during storage and recall (Gentry & Buckner 2024) suggest that the episodic-semantic distinction may not be particularly sharp (Andonovski 2020).

The challenges in the second set bear less on the episodic-semantic distinction than they do on the concept of episodic memory itself. One challenge here concerns the particularity of episodic memory: episodic memories are typically taken to be about particular events, but there is reason to suspect that they may, in some cases, be about general events. Though some have argued that “*generic*” memories are not, strictly speaking, episodic (Debus 2008, 2014), others, persuaded by the overall similarity of generic memories to “particular” memories, have devoted their efforts to understanding the generality in virtue of which generic

memories are distinct from the particular memories on which most research has concentrated to date. Thus Entwistle (2025a) takes generic memories to be general in the sense that they are about event types, Crone (2025) treats them as being general in the sense that they are about event prototypes, and Openshaw (forthcoming a) argues that they are general in the sense that they do not determinately refer to particular events. Another challenge concerns the eventive character of the entities that episodic memories represent: while it is standardly assumed that episodic memory is concerned exclusively with events, Openshaw (2022) points to the existence of *objectual memory*, arguing that remembering an object need not entail remembering an event in which it was involved. Assuming that Openshaw is right, either the category of episodic memory will need to be expanded or objectual memory will need to be introduced as a category alongside those of episodic and semantic memory.

If these challenges are eventually overcome, philosophers will only have further work to do, for the metaphysical status of the various types of memory that are posited by the standard taxonomy is unclear. What is at issue here is whether they qualify as [natural kinds](#). The view that memory as a whole is a natural kind has enjoyed little popularity (see Michaelian 2011b; Rupert 2013). The view that declarative memory as a whole is a natural kind has been taken seriously by some (Michaelian 2015), but the view that episodic memory, in particular, is a natural kind has attracted significantly more attention (Andonovski 2018; Brons 2019; Cheng & Werning 2014; Khalidi 2023; Klein 2015; Michaelian 2016c; Werning forthcoming). There is, however, no consensus on the natural kindhood of episodic memory, and there is little work on the natural kindhood of semantic memory, on that of nondeclarative memory as a whole, or on that of specific forms of nondeclarative memory; a great deal of work thus remains to be done. It is therefore reassuring to note that research on natural kinds of memory continues apace, with Gomez-Lavin (2024), for example, asking whether working memory is a natural kind (see section 9.2) and Colaço (2022) examining kinding strategies in empirical memory research from a philosophy of science perspective.

2. Memory and personal identity

As noted above, philosophers of memory have been interested, first and foremost, in episodic memory. This interest arguably stems, at least part, from the apparent relationship between episodic memory and [personal identity](#) (see Dranseika 2022).

The best-known theory of personal identity is undoubtedly the *memory theory*, which holds that what makes a person at a later time identical to a person at an earlier time is that the former remembers the experiences of the latter (Locke 1689/1975). The best-known objection to the memory theory is the circularity objection, which holds that, because memory presupposes personal identity, the theory is ultimately circular (see Nichols 2017). Attempts have been made to meet the circularity objection by invoking the concept of quasi-memory, where quasi-memory is like memory but does not presuppose personal identity (see Roache 2006). These attempts, however, have left many unpersuaded (e.g., Northoff 2000).

An objection of a rather different sort focusses on the method, which relies heavily on thought experiments involving outlandish memory swapping cases, that is standardly employed in arguments for the memory theory. In pursuit of an approach based on less outlandish cases, Craver and his collaborators (Craver 2012; Craver et al. 2014) have investigated the consequences of amnesia for personal identity and Schechtman (1994, 2011) has argued that the sense of personal identity depends not on the connection to specific past experiences that is provided by episodic memory but rather on the narrative of the personal past as a whole that is provided by autobiographical memory.

Craver's approach is discussed in section 4.2. Schechtman's approach has been influential, and there is considerable interest in the relationship between memory and narrativity (often intersecting, it should be noted, with the interest in interactions between internal and external memory that are described in section 10.1; Heersmink 2020, 2022; Colombetti & Bogotá 2024; Fabry 2023), but it should be noted that, because

it focusses not on personal identity but rather on the *sense of personal identity*, the approach in effect changes the subject (Strawson 2004; Goldie 2012). The sense of personal identity is, however, itself evidently of interest, and this change of subject is quite explicit in recent work on the experience of the self in remembering, as Klein and Nichols and their interlocutors have considered the implications of the phenomenon of disowned memory, in which the subject remembers but does not experience his memories as being his own, for the sense of personal identity (Klein and Nichols 2012; Klein 2016; Gerrans 2018; Fernández 2019; Roache 2016) and other authors have explored potential dissociations among distinct senses of personal identity in remembering (Dings & McCarroll 2022; Lin forthcoming) or the consequences of the constructive character of remembering for the construction of personal identity (Guerrero-Velázquez forthcoming).

3. Remembering

Notwithstanding their evident interest, personal identity and the sense of personal identity have played major roles neither in the development of the epistemic (section 3.1) and classical causal theories of memory (section 3.2) nor in the development of the various nonclassical causal (section 3.3) and postcausal (section 3.4) theories the proliferation of which has marked the recent literature, eventually triggering a metatheoretical debate (section 3.5).

3.1 Epistemic theories

Epistemic theories, which have enjoyed relatively little popularity in recent years, have in common that they hold that to remember is to retain knowledge (James 2017; Lai 2022b; Sakuragi 2026; Hoerl forthcoming). Older epistemic theories aimed to account for semantic (or propositional) remembering, which lends itself naturally to analysis in epistemic terms (see Senor 2019; Frise 2026). Given that the field as a whole is centered on episodic memory, the relative lack of popularity of the epistemic approach is potentially explained in part by the focus of epistemic theorists on semantic memory. More recent epistemic theories, however, aim to account for episodic remembering, holding that to remember episodically is to retain knowledge of what it was like to experience something (Hoerl 2022; Springle & Goldwasser 2025). As more sophisticated versions of these theories become available, the popularity of the epistemic approach may well increase.

A further potential explanation of the unpopularity of the epistemic approach appeals to the widespread awareness that it faces objections that are often thought to be insurmountable. One such objection maintains that the notion of retention will ultimately have to be unpacked in causal terms and that the epistemic theory will therefore ultimately collapse into the causal theory (Bernecker 2008). Another maintains that false memories are normal outputs of properly functioning memory systems (De Brigard 2014a) and that, unlike knowledge, memory therefore cannot be factive (see Kahn 2025). But the unpopularity of the epistemic approach is arguably to be explained primarily by the suspicion that, in virtue of the fact that it employs the normative vocabulary of epistemology, it will be difficult if not impossible to reconcile with naturalism.

3.2 Classical causal theories

Early arguments for causalism rested more or less exclusively on appeals to intuition and were thus not naturalistic in character, but causal theories are, unlike epistemic theories, themselves in principle compatible with naturalism; indeed, the more recent arguments for causalism reviewed in section 3.3 below appeal as much to empirical evidence as they do to intuitions. This combined intuitive and empirical basis likely explains the widespread and enduring appeal of causalism, which continues to be the dominant approach to remembering.

The wide array of causal theories on offer in the recent literature all recognizably descend from the classical causal theory in that they hold that remembering an event requires an *appropriate causal connection* to a past experience of that event. As formulated by Martin and Deutscher (1966), the classical causal theory takes a subject's apparent memory to be a genuine memory just in case it satisfies three conditions: first, the subject experienced the relevant event when it occurred; second, he now represents that event; third, there is an appropriate causal connection between his past experience and his current representation. The theory takes a causal connection to be appropriate just in case it is underwritten by a *memory trace*.

The causal theory has been the target of a range of a priori objections. Malcolm (1963), in an early objection, argues on Wittgensteinian grounds that the concept of memory is not causal in character. Zemach (1983) grants that that concept is causal in character but argues that we cannot establish a priori that remembering involves memory traces. Bernecker (2010), more recently, grants that appropriate causation involves memory traces but argues that the appropriate causation condition needs to be refined so as to take into account features of remembering including the counterfactual dependence of the current representation on the past experience, as opposed to the memory trace by which it is linked to that experience. The sophisticated variant of the classical causal theory proposed by Bernecker has itself been the target of a priori objections aimed specifically at it (Robins 2017; James 2017), but it is also vulnerable to a criticism that threatens not only any classical causal theory but also any of the nonclassical causal theories described in the following section (as well as some of the postcausal theories described in the two subsequent sections): Debus (2010) argues that an apparent memory is not a genuine memory unless the subject treats it as relevant when forming beliefs about the past; a purely causal theory, she thus suggests, is bound to be incomplete, and the appropriate causation condition must be supplemented with an epistemic relevance condition.

The importance of this and other intuitive objections is recognized by partisans of causalism, but the recent flurry of work by causalists has been driven primarily by the need to respond to empirical memory research. This work has aimed, above all, to produce a conception of traces that goes beyond the suggestive but empirically unsatisfyingly conception inherited from Martin and Deutscher (De Brigard 2014b; Andonovski forthcoming). There has been some opposition to the very notion of traces, with Hutto (2023, forthcoming; Hutto & Peeters 2018), for example, arguing that the notion ought simply to be jettisoned (see Caravà 2023). Most causalists, however, have aimed to go beyond Martin and Deutscher not by rejecting the notion of traces but rather by developing alternative, empirically-inspired conceptions of traces (De Brigard 2020; Colaço forthcoming a).

3.3 Nonclassical causal theories

Martin and Deutscher's conception of traces sees them as having two key features: first, they transmit content from past experiences to present memories; second, a given trace provides a privileged link to a particular past experience (see Najenson forthcoming). The *distributed*, *contentless*, and *mental files* conceptions of traces that are reviewed in this section—and the nonclassical causal theories to which they give rise—are most easily grasped if the stances that they take with respect to these two features are kept in mind.

Constructive causal theories are designed primarily to make sense of empirical research on the constructive character of remembering. Building on Sutton's (1998) pioneering work, Michaelian (2011a) argues for a distributed conception of traces that sees them as being modifications to the strengths of connections among nodes in a [connectionist](#)-style network and goes on to argue that, once such a conception is adopted, it must be acknowledged that the content of a retrieved memory can originate in multiple sources and therefore that it can go beyond that of the corresponding past experience. Sutton & O'Brien (2023) have recently defended a broadly similar theory.

Objecting to constructive causal theories, Robins (2016c) points out that, while distributed conceptions see traces as transmitting content from past experiences to present memories (that is, as having the classical conception's first feature), they will, given that they allow that traces can be causally connected to multiple experiences, have difficulty explaining how a given trace might provide a privileged link to a particular past experience (the classical conception's second feature). The consequence is that constructive causal theories will have difficulty accounting for many of the characteristics of memory for which the classical causal theory set out to account. As Sant'Anna (2021b) points out, for example, constructive causal theories, unlike the classical causal theory, will be unable to tell a straightforward story about the particularity of memories.

One response to this difficulty has been to attempt to pry appropriate causation and traces apart. Langland-Hassan (2022a, 2023), for example, endorses a distributed conception of traces but rejects the claim that a causal connection is appropriate just in case it is underwritten by a memory trace: the privileged connection between the present memory and the particular past experience, he argues, might be secured not by traces but rather by factors such as a retained belief or a feeling of fluency. Bacharach (forthcoming) likewise defends a view of appropriate causation that does not invoke traces. The more popular response, however, has been to reject constructive causalism in favour of contentless causalism. Whereas constructive causal theories emphasize the classical conception's first feature and downplay its second, *contentless causal theories* emphasize the second feature and downplay the first. Thus Perrin (2018, 2021) proposes a *procedural causal theory* according to which traces are to be understood as containing only noncontentful procedural information that allows the system to reconstruct past experiential states. Werning (2020; cf. Rappe & Werning forthcoming; Brown forthcoming b), meanwhile, proposes a *minimalist causal theory* according to which traces contain a noncombinatorial form of information that falls short of full-blown representational content but that allows the memory system to reconstruct contentful representations of particular past events.

Objecting to the procedural causal theory, Michaelian (2022) argues that the empirical evidence cited by Perrin fails to establish the necessity of procedural causation and that the theory fails to rule out cases of deviant causation, such as relearning, that causalists want to rule out (see section 4.1). Objecting to the minimalist causal theory, Andonovski (2022) maintains that, because it relies on considerations about the reliability of memory systems, Werning's argument for the necessity of causation can only secure type-level causal generalizations and thus fails to establish the necessity of causal connections between token memories and token experiences.

Andonovski (2024) has gone on to steer a middle course by adopting a conception of traces as mental files (Goodman 2024), a conception that results in a version of the causal theory that sees traces as transmitting content (the classical conception's first feature) and as providing privileged links to particular experiences (the classical conception's second feature) even while recognizing the distributed character of traces: traces, he argues, are structurally complex, including both a distributed representation the content of which can originate in multiple sources and an index that points back to a particular experience. Andonovski's theory is innovative, but it remains to be seen whether it can overcome the difficulties faced by constructive and contentless causalisms. It likewise remains to be seen whether the recent conceptions of traces that have been inspired by optogenetics, a technique that enables us to track and intervene on specific traces, conceptions that see traces as having both of the classical conception's features but not as having a distributed character (Robins 2018, 2023a; Najenson 2021, 2025; Colaço & Robins 2023), might result in theories able to overcome those difficulties.

3.4 Postcausal theories

Nonclassical causalists attempt to avoid the problems that beset classical causalism while remaining loyal to the causalist framework. *Postcausalists*, including simulationists and functionalists, in contrast, opt to reject that framework (Michaelian & Robins 2018).

Simulationism is designed primarily to make sense of empirical research on remembering as a form of mental time travel, which demonstrates surprising overlaps between episodic memory and episodic future thought (imagining future events) at the neurocognitive level. Shanton and Goldman (2010; cf. Pedersen forthcoming) can be read as advocating a protosimulationist approach to memory, but the first recognizably simulationist approach was developed by De Brigard (2014a), who does not take a clear stand against causalism (Michaelian et al. 2025) but who does treat episodic memory as being one product of a system responsible for both episodic memory and episodic future thought. The most detailed defence of simulationism to date is offered by Michaelian (2016c), who appeals to the link between episodic memory and episodic future thought to argue that remembering amounts to imagining the personal past and thus requires reliability but not appropriate causation.

The numerous objections to simulationism that have been formulated by its opponents fall naturally into three groups. The first group is made up of objections that target the use made by the theory of the notion of reliability. Here, Lai (2024b) maintains that remembering does not require reliability, while Werning (2020) grants that remembering requires reliability but argues that reliability requires appropriate causation. The second group is made up of objections that flag the theory's apparent explanatory limitations. Here, some authors suggest that the theory is unable to explain phenomena related to remembering, such as forgetting and infantile amnesia (McCarroll 2020b), semanticization (Aronowitz 2025), and memory errors (Robins 2016a, 2019, 2020b; Bernecker 2017, 2023), while others take it that it is unable to explain features of remembering itself, such as its characteristic phenomenology (Rivadulla-Duró 2024) and its reference to past events (Entwistle 2025b). The third group, finally, is made up of objections that question the theory's empirical credentials. Here, Perrin (2016) and De Brigard (2025) challenge the view that a single neurocognitive system is responsible both for episodic memory and for episodic future thought (cf. Camillo forthcoming; Schwartz forthcoming), while Andonovski et al. (2024; see also Andonovski et al. forthcoming) and Hoerl (2022) suggest that simulationism may entail eliminativism about episodic memory.

The need to respond to these challenges has led simulationists to propose several substantial modifications to the theory. First, in response to McCarroll's charge that simulationism implies that one might have a genuine memory of an event that took place before one was even born, Michaelian (2024a), biting the bullet, proposes a *radical* simulationism that allows that one can episodically remember not only the personal but also the nonpersonal past. Second, in response to Robins' and Bernecker's charge that simulationism is unable to distinguish between successful remembering, on the one hand, and confabulation and misremembering, on the other, Michaelian (2021b) develops an *aretaic* simulationism that draws the requisite distinction by appealing to the idea that successful remembering requires accuracy due to reliability. Third, in response to Perrin's and De Brigard's charge that episodic memory and episodic future thought are not as continuous as simulationism makes them out to be, Álvarez (forthcoming) suggests that simulationists might concede the point, abandoning the continuist simulationism that they have so far endorsed in favour of a *discontinuist* simulationism (see section 6.1). Some of these modified simulationisms have themselves been challenged: Millar (forthcoming), for example, challenging aretaic simulationism, argues that remembering does not require accuracy due to reliability. But even if the modifications succeed in overcoming the objections to which they respond, simulationists will have their work cut out for them in responding to the other objections listed above.

As the number of objections on the list indicates, the causalist-simulationist debate has—notwithstanding scattered attempts to reconcile the two approaches (Fraga Dantas 2020; Ménager et al. 2022a,b; De Brigard forthcoming)—been particularly fierce, but causalism has also been challenged by functionalist theories of memory: in line with [functionalism](#) about mental states more generally, functionalist theories approach memory in terms of the causal role that it plays in the subject's cognitive economy. Two distinct functionalist theories have been proposed. Fernández' (2018, 2019, 2020, 2024) theory, on the one hand, characterizes memory in terms of its tendency to be caused by a past experience of an event and to cause the subject to believe both that the event occurred and that he experienced it when it occurred. Langland-Hassan's (2021) theory, on the other hand, characterizes memory in terms of its tendency to be caused by a relevant memory trace and to cause certain mental states and behaviours. What unites the two theories,

beyond their shared functionalism, is that, like simulationism, they are forms of postcausalism: while both take it that a present memory of an event tends to be caused by a past experience of that event, neither takes it that it is, strictly speaking, necessary for the memory to be so caused in order for it to qualify as genuine. What divides them is the stances that they respectively adopt concerning memory traces: whereas Langland-Hassan's theory assigns a central role to traces, Fernández' theory makes no mention of them.

A range of doubts about functionalism have been voiced. One is whether it amounts to a genuine alternative to causalism and simulationism, given that the latter are concerned with memories taken as token mental states, while functionalism is concerned with memory taken as a type of mental state (Robins 2021). Another is whether questions about the functional role of memory can be answered without taking into account the nature of the cognitive systems that realize token memories (Andonovski 2021). Functionalists have taken steps to respond to these doubts (Fernández 2021) and others (see James 2021; Trakas 2021a; Viera 2021), but considerable work will be required to determine the viability of the functionalist approach to memory.

3.5 The metatheoretical debate

The proliferation of alternatives to the classical causal theory has triggered a debate among partisans of nonclassical causal theories and postcausal theories over a pair of related but distinct metatheoretical issues.

The first of these issues concerns potential ambiguities in how the term 'remembering' is understood. Craver (2020; cf. Rudnicki forthcoming) argues that the term is ambiguous between an "epistemic" reading, on which it designates a mental state that affords a distinctive type of knowledge, and an "empirical" reading, on which it designates the behavior of a neurocognitive system. Certain theories (epistemic theories and arguably the classical causal theory) align with the epistemic reading, while others (nonclassical causal theories, simulation theories, and perhaps functionalist theories) align with the empirical reading. Schirmer dos Santos et al. (2023) agree with Craver in taking 'remembering' to be ambiguous among multiple readings but disagree with him in taking this ambiguity to reflect the existence of a substantive disagreement about the nature of memory. The causalist-simulationist debate is, in their view, most aptly seen as a metalinguistic negotiation (Plunkett and Sundell 2013) between proponents of incompatible meanings that might be assigned to 'remembering'. Viewed as a metalinguistic negotiation, the debate concerns not the question which theory is best supported by the empirical evidence but rather the question which empirical evidence is most relevant to theorizing about memory.

The second issue concerns the explanatory goals of the various theories in play. Building on Nanay's explanatory contextualism (Nanay 2015), McCarroll et al. (2024a) argue that causalism and simulationism are attempts to answer questions that arise in distinct contexts. Causal theories, as they see it, correspond to contexts in which memory is treated as a source of knowledge, such as the courtroom. Simulation theories, in contrast, correspond to contexts in which memory is treated as an object of knowledge, such as the psychology lab. If McCarroll et al. are right, there may be an important sense in which the two theories are ultimately not incompatible. Openshaw (2023; cf. Sant'Anna & Openshaw 2025) similarly argues that different theories of remembering have been developed to serve different explanatory goals. Simulationists, he argues, theorize about remembering at the psychofunctional level, focussing on the neurocognitive systems responsible for producing memories. Causalists, in contrast, theorize about remembering at the semantic level, focussing on the reference of memories to past events. Epistemic theorists, finally, theorize about remembering at the epistemic level, focussing on memory as a source of knowledge. If Openshaw is right, there may, again, be a sense in which these theories are ultimately not incompatible.

4. Failing to remember

No resolution of this metatheoretical debate is in sight. The same can be said of another debate triggered by the availability of multiple theories of memory. Philosophers of memory began, naturally enough, by

focussing on cases in which genuine remembering occurs. But cases in which genuine remembering fails to occur have potential to shed light on the nature of remembering, and they have therefore devoted significant attention to these as well, examining both cases of memory error, in which apparent remembering occurs but fails to meet the standards for genuine remembering (section 4.1), and cases of memory failure, in which apparent remembering does not occur at all (section 4.2).

4.1 Confabulation and misremembering

What will here be called the “memory error debate”, which has sometimes also been called the “confabulation debate”, is concerned, in the first instance, with *confabulation* and *misremembering* but also bears on potential errors of other sorts, including *relearning*. Because the natures of these errors are precisely what is at issue in the debate, no non-question-begging definitions of them can be given here, but it can be said that, when a subject confabulates, his memory is typically false or predominantly false, that, when he misremembers, his memory is false with respect to details of the relevant event, and that, when he relearns, he has forgotten the event and reacquired information about it from an external source before apparently remembering the event on the basis of the reacquired information.

The memory error debate pits *epistemic*, *causalist*, and *simulationist* approaches to these and related errors against each other. Proponents of epistemic accounts of memory error focus specifically on confabulations, which they characterize as ill-grounded representations of the past (Hirstein 2005, 2010; Bortolotti & Cox 2009; Sullivan-Bissett 2015; Bortolotti 2018; cf. Murray & Finocchiaro 2021; Bielecka 2025, forthcoming). Hirstein’s account, in particular, treats confabulation as involving both object-level and meta-level error: a confabulation is an ill-grounded representation of the past that the subject ought to recognize but fails to recognize as being ill-grounded. Like the epistemic approach to successful memory, the epistemic approach to memory error has enjoyed relatively little popularity in recent years, and the memory error debate has unfolded primarily between competing causalist and simulationist approaches.

Proponents of causalist accounts characterize errors in terms of accuracy and appropriate causation (Robins 2016a, 2019, 2020b; Bernecker 2017, 2023; Khalidi 2017; cf. Openshaw 2025). An early version of Robins’ account, for example, sees successful remembering as occurring when accuracy and appropriate causation conditions are satisfied, confabulation as occurring when neither of these conditions is satisfied, misremembering as occurring when only the appropriate causation condition is satisfied, and relearning as occurring when only the accuracy condition is satisfied (Robins 2016a). Proponents of simulationist accounts characterize errors in terms of accuracy and reliability (Michaelian 2016b, 2020). An early version of Michaelian’s account, for example, sees successful remembering as occurring when both accuracy and reliability conditions are satisfied, falsidical confabulation as occurring when neither of these conditions is satisfied, misremembering as occurring when only the reliability condition is satisfied, and veridical confabulation (rather than misremembering) as occurring when only the accuracy condition is satisfied (Michaelian 2020). As the contrast between Robins’ and Michaelian’s accounts suggests, the status of relearning as an error has itself been a matter of controversy: if, following Martin and Deutscher (1966), philosophers of memory have generally taken for granted the view that relearning is an error, the opposing view has increasingly been adopted by both causalists and simulationists (Álvarez 2025; cf. Lai 2024a; Álvarez et al. forthcoming).

A more recent version of Michaelian’s account converges with Hirstein’s epistemic account by treating confabulation as involving both object-level and meta-level unreliability (Michaelian 2023). Nevertheless, the epistemic approach itself has, as noted above, been relatively unpopular, likely due to the difficulty of reconciling it with naturalism. Notwithstanding the unpopularity of the epistemic approach, a number of authors have suggested that, if the memory error debate is to make real progress, it will have to be disentangled from the causalist-simulationist debate (Miyazono & Tooming forthcoming; Robins & Caravà forthcoming). It remains to be seen what approaches to memory error that align neither with the epistemic approach, nor with the causalist approach, nor with the simulationist approach might look like.

4.2 Forgetting and amnesia

The memory errors examined in the previous section can be seen as errors of commission, in which the subject apparently remembers but in which his memory is inaccurate or otherwise deficient. The memory failures examined in the present section—forgetting and amnesia—can be seen as errors of omission, in which the subject fails even apparently to remember.

Forgetting can be seen either as a mental state or as a psychological process. There have been surprisingly few attempts to define forgetting seen as a mental state, but Frise (2018) has offered a detailed analysis according to which forgetting occurs when the subject either tries but fails to access a memory or is unable to access a memory even in principle. This analysis is roughly in line with the distinction that is often drawn, with respect to forgetting seen as a psychological process, between forgetting as the inaccessibility of information and forgetting as the unavailability of information (Michaelian 2011c; Caravà 2021b).

Distinct questions about forgetting have been asked by philosophers of mind, epistemologists, and ethicists. Philosophers of mind have focussed on whether explaining forgetting requires invoking stored content (Caravà 2021a) or memory traces (McCarroll 2020b). Epistemologists have focussed on whether forgetting is a cognitive vice and on how it might either interfere with or contribute to the production of knowledge (Mi & Tang 2022; Mi 2021). Forgetting might interfere with the production of knowledge due to [forgotten evidence](#) (e.g., Naylor 2015; Sakuragi 2024). It might contribute to the production of knowledge due to increase in justification via loss of information (Bernecker & Grundmann 2018; Madison 2014). Ethicists, finally, have asked whether one has a right to be forgotten (e.g., Matheson 2013; Burkell 2016; Basu 2022), whether one can be blamed for forgetting given that one does not have control over it (e.g., Bernecker 2018; Reiheld 2018; Murray et al. 2019; Grunbaum 2024), and whether [forgiveness](#) requires forgetting, with several authors emphasizing the transformative nature of forgiveness and the role played by remembering in the process of forgiving (e.g., Murphy & Hampton 1988; Hughes 1993; cf. Blustein 2014).

There is somewhat less work on the extensive memory loss seen in amnesic subjects than there is on the mundane memory loss seen in cognitively healthy subjects. Clinical amnesia has been investigated by philosophers primarily in connection with issues such as responsibility and the self. The idea that episodic memory is essential to subjects' understanding of time and to their status as agents is widespread in philosophy (e.g., Hoerl 1999; Kennett & Matthews 2009). Thus McDougal (2024), for instance, suggests that it may be appropriate, in light of their memory deficits, to reduce punishment for amnesics. Craver and his collaborators have, however, challenged this idea, arguing that, despite their lack of episodic memory, amnesics have genuine selves (Craver 2012) and are capable of both moral and temporal reasoning (Craver et al. 2014; 2016). They have further argued that, in light of these considerations, existing approaches to the issue of consent by amnesic subjects in experimental settings ought to be reconsidered (Craver & Rosenbaum 2018).

Nonclinical forms of amnesia have also been investigated by philosophers. Montero (2019, 2020), for example, looks at post-performance and pain amnesia, arguing that the latter points to the limitations of knowledge based on experience (see also Coninx 2020). Tanesini (2018) and Chevalier (forthcoming), in an approach that intersects with the work on collective memory discussed in section 10.2 below, explore the concept of collective amnesia and the forms of injustice in which it may result. There is room for considerably more work both on nonclinical and on clinical forms of amnesia.

5. The semantics of memory

Philosophers' inquiries into what it is to remember (and to fail to remember) have resulted in the theories reviewed above. Their inquiries into what is remembered (when memory failure does not occur) have resulted in accounts of a cluster of broadly semantic aspects of memory: the objects of memory and

mnemonic awareness (section 5.1), perspective in remembering (section 5.2), the accuracy of memories (section 5.3), and mnemonic reference (section 5.4).

5.1 Objects

The question of the nature of the objects of memory was central in the modern period and the early twentieth century, with discussion revolving around indirect and direct realism. *Indirect realism* is the position according to which the objects of memory are mind-dependent entities, such as ideas, mental images, or representations (e.g., Locke 1689/1975; Hume 1739/2011; Russell 1921/2005; see Copenhaver 2017; Flage 2017) that stand for things in the external world. *Direct realism* is the position according to which the objects of memory are mind-independent entities, such as objects or events in the environment (e.g., Reid 1764/1997; Laird 1920; see Copenhaver 2017). Contemporary discussions have, however, under the influence of developments in the philosophy of perception, come to focus less on the question of the nature of the objects of memory and more on that of the nature of mnemonic awareness, the kind of awareness that is thought to be characteristic of episodic memory.

Here, again, discussion revolves around two positions. *Representationalism* (or intentionalism) takes mnemonic awareness to be fundamentally nonrelational (Bernecker 2008; Barkasi & Rosen 2020; Copenhaver 2024; Barkasi forthcoming). To remember is, according to representationalism, to represent past entities as being a certain way. *Relationalism* or (naïve realism) takes mnemonic awareness to be fundamentally relational (Debus 2008; Aranyosi 2020, 2021; Sant'Anna & Barkasi 2022). To remember is, according to relationalism, to be related to past entities in a certain way. Because they take mnemonic awareness to be fundamentally relational, relationalists are committed to *disjunctivism*, the claim that, since unsuccessful remembering does not involve the relation characteristic of successful remembering, it differs fundamentally in kind from the latter. Attempts to formulate hybrid representationalist-relationalist position have been made (Sant'Anna 2020; Noordhof 2022), but representationalism and relationalism are usually taken to be thoroughly incompatible with each other, with representationalism serving as the default position.

Relationalism has been attacked on a variety of grounds. Some have argued that it is unable to account for memory errors, given the constructive character of memory (Sant'Anna 2022). Others have argued that it requires committing to controversial views in the metaphysics of time, such as eternalism (Sant'Anna & Michaelian 2019; cf. Schirmer dos Santos 2018), and that it sits ill with the apparent continuity between memory and imagination, given its commitment to disjunctivism (Sant'Anna and Michaelian 2019; see section 6.1). And yet others have attempted to show that it is unable to explain mnemonic reference in cases of memories of non-veridical experiences, such as hallucinations and dreaming (Werning & Liefke 2024, 2025). Relationalists have defended their position primarily by arguing that it offers a better explanation of subjects' felt direct awareness of the past (Barkasi & Sant'Anna 2022), though representationalists have parried the attack by attempting to show that they can offer an equally good explanation (Barkasi & Rosen 2020; Copenhaver 2024). While representationalism remains the default position, relationalism is increasingly widespread, and relationalists have begun to explore the implications of their position for issues including the rivalry between causalism and simulationism (Schwartz 2018; Aranyosi 2021; Moran 2022).

5.2 Perspective

If the indirect realist, direct realist, representationalist, and relationalist positions discussed in the previous section have recognizable analogues in the [philosophy of perception](#), the positions that have emerged in the work discussed in the present section do not, simply because the phenomenon with which they are concerned itself has no analogue in perception. The phenomenon in question is that of observer perspective remembering, defined as remembering in which the visual perspective from which the remembered event is represented does not match the visual perspective from which it was experienced, potentially allowing the subject to see himself in the remembered scene (Sutton 2010b; McCarroll & Sutton 2017; Peeters et al.

2023). (For example, one might, when remembering a talk that one gave, remember it not from one's original perspective but rather from the perspective of an audience member.) The importance of observer remembering was not widely recognized prior to the publication of McCarroll's (2018) book on the topic, but it is now well established and plays a central role in multiple debates. The centrality of the phenomenon is perhaps clearest in the work on the accuracy conditions of memories that is discussed in the following section, but philosophers have also explored the phenomenology of observer remembering (Lin 2020; McCarroll & Lin 2024) and the relationship between observer memory and trauma (Fernández 2015; McCarroll 2017; Frise 2024), and they have asked whether observer memories are immune to error through misidentification (Fernández 2021b; Michaelian 2021a; Perrin & McCarroll 2023) and how observer memories might contribute to the process of forgiving (McCarroll & Dings 2023).

The question that has been most hotly debated, however, is whether observer memories qualify as genuine memories. Given that an observer memory would seem inevitably to contain information not contained in the corresponding past experience, many philosophers have considered observer memories inevitably to be distorted and have expressed scepticism about their genuineness (Vendler 1979; Wollheim 1984; cf. Dranseika et al. 2021). Bernecker (2015) responds to this scepticism by arguing that observer memories are inferential memories—that is, that the apparently new information contained in an observer memory is in fact entailed by the information contained in the corresponding past experience. McCarroll (2018) responds by arguing that the apparently new visual information contained in an observer memory results from the “translation” of nonvisual information contained in the corresponding past experience. Debate over McCarroll's response, in particular, is ongoing (Trakas 2020; McCarroll 2020; Michaelian & Sant'Anna 2022).

5.3 Accuracy

If it turns out that observer memories can be genuine, there is a further question about whether they can be accurate (Sant'Anna & Camillo 2025). The growing literature on mnemonic accuracy, which tends to take representationalism for granted, starts from Bernecker's (2010, 2015) distinction between *truth* and *authenticity*. A memory is true when it is accurate with respect to the corresponding past event. It is authentic when it is accurate with respect to the past experience of that event. Truth and authenticity can come apart: if a subject misperceives an event, for example, then a memory that is accurate with respect to his perception will be inaccurate with respect to the event itself, and vice versa. The literature on mnemonic accuracy was initially centered on two views: *authenticism* and *alethism*. According to authenticism, successful remembering requires both truth and authenticity (Bernecker 2010, 2015; McCarroll 2018; McCarroll & Openshaw forthcoming; see also Fernández 2019; Dings et al. 2023). According to alethism, successful remembering requires truth but does not require authenticity (Michaelian & Sant'Anna 2022). (The view according to which successful remembering requires authenticity but does not require truth has so far found no defenders.) The plausibility of authenticism and alethism has been assessed primarily in relation to observer remembering.

Authenticism fares well when it comes to intuitions about the accuracy of field memories, defined as memories in which the visual perspective from which the remembered event is represented matches the visual perspective from which it was experienced, but—despite Bernecker's and McCarroll's attempts, invoked in the previous section, to develop authenticist accounts of observer remembering—appears to have difficulty when it comes to intuitions about that of observer memories. The empirical literature shows both that observer remembering is a common occurrence and that, in many cases, observer memories are inaccurate only with respect to the visual perspective of the experience. Intuition thus suggests that observer memories can be fully successful, but, given that observer memories are inaccurate with respect to visual perspective, authenticism seems to imply that they are bound to be unsuccessful. Since alethism does not require accuracy with respect to the experience, it does not require accuracy with respect to visual perspective and thus appears to be better able to respect intuitions about the accuracy of observer memories (Michaelian & Sant'Anna 2022). Alethism does, however, face other problems. In particular, it appears to have difficulty accounting for the possibility of successful remembering in cases, such as dreaming and

imagining, in which the object of the experience did not exist and accommodating the intuition that memories represent past experiences (McCarroll et al. 2024b).

While the mnemonic accuracy literature was initially centered on the contest between authenticism and alethism, both views are challenged by *pisticism*, which contends that successful remembering requires accuracy only with respect to the intentional object of the corresponding experience (Michaelian 2024b). Pisticism fares better than alethism with respect to the need to account for the possibility of successful remembering in cases, such as hallucination and dreaming, in which the object of the experience did not exist, but it encounters the same difficulty as alethism with respect to the need to accommodate the intuition that memories represent past experiences. Regardless of which of authenticism, alethism, and pisticism fares best overall, all three views are challenged by new forms of *pluralism* and *contextualism* about mnemonic accuracy, as well as by views that combine features of authenticism and alethism (Mitchell forthcoming). Pluralism holds that memories that correspond to experiences of different kinds need to satisfy different accuracy conditions in order to count as successful; memories corresponding to dreams, for example, may need only to be accurate with respect to the experience, whereas memories corresponding to ordinary experiences may need to be accurate with respect to both the experience and the event (Liefke 2025; see Cheng 2025). Pluralism holds that context plays a key role in determining which accuracy conditions must be satisfied. The role of context is likewise foregrounded by the various contextualist views that have recently been proposed. These views emphasize factors such as the function served by remembering (Dings et al. 2023), the context of inquiry in which remembering takes place (Camillo 2025b), and the components of the content of individual memories (McCarroll & Perrin 2025).

It remains to be seen whether pluralism and contextualism might fare better than authenticism, alethism, and pisticism in relation to observer remembering. Recently, moreover, a sharply diverging perspective has been articulated by Myin & van Dijk (2022), who argue that remembering is fundamentally a practice and mnemonic accuracy a sociocultural achievement. This view suggests that accuracy is shaped by other normative factors, factors that, as several authors have emphasized, need to be taken into consideration in a full-blown account of the success conditions of remembering (Campbell 2014; Driver forthcoming; Puddifoot forthcoming).

5.4 Reference

A memory can arguably be accurate only if it can refer, and the question of mnemonic accuracy discussed in the previous section is thus intimately linked to the question of mnemonic reference. Episodic memories are, as noted in section 1, typically taken to be about—that is, to refer to—particular events. It may thus initially strike one as odd that philosophers have only recently begun to ask how memories might come to refer to such events. This should strike one as less odd when one realizes that it was long taken for granted that the causal theory of memory could be married to the [causal theory of reference](#), according to which reference in general is fixed by appropriate causal connection, with the result being an attractively straightforward account of mnemonic reference in particular: memory traces, because they underwrite appropriate causal connections to particular experiences, explain how memories designate particular events.

As the classical causal theory has been supplanted by the nonclassical causal theories and postcausal theories reviewed in sections 3.3 and 3.4, this has ceased to be taken for granted (Openshaw forthcoming b, c). The result is a rapidly growing body of research that aims to develop alternatives to the classical causal account of mnemonic reference, with some authors proposing nonclassical causalist accounts (Werning & Liefke 2024, 2025), others emphasizing the purpose of retrieval (Barkasi 2024a), the intentions of the rememberer (Langland-Hassan & Wang forthcoming), and features of memory content (Sant’Anna 2020), and yet others appealing to the reliability of remembering (Openshaw & Michaelian 2024; Openshaw 2025) and the mental files framework (Andonovski 2024; Murez & Strickland 2024; Recanati 2024; cf. Goodman & Gray 2024). This research also raises a number of wholly novel questions, with Verdejo (2024) asking what is required to be able to remember the same particular event on multiple occasions and Perrin (2024) asking what is involved in having the same memory on multiple occasions, while Hoerl

(2024) asks whether singular thought about a particular requires being aware that one encountered it in the past. The emergence of these new questions suggests that, despite the rapid growth of research in this area, much more work on mnemonic reference should be expected to appear in the near future.

6. Memory and other forms of cognition

Section 4 reviewed arguments that suppose that a comparison of cases in which the subject remembers to cases in which he fails to remember can shed light on the nature of remembering. This section reviews arguments that suppose that the same thing is true of a comparison of cases in which the subject remembers to cases in which he engages in a related but distinct cognitive process. To date, episodic remembering has been compared chiefly to imagining (section 6.1) and to semantic remembering (section 6.2), but there is new interest in comparing it to dreaming (section 6.3).

6.1 Memory and imagination

Insofar as [imagination](#) is concerned, philosophers of memory have been interested both in the differences between its phenomenology and that of episodic memory (Perrin forthcoming) and, in what has come to be known as the *continuism-discontinuism debate*, in a range of other differences as well.

Historically, both *quality-based* and *feeling-based* accounts of the differences between the phenomenology of memory and the phenomenology of imagination have been prominent. Quality-based accounts understand the phenomenological differences in question as deriving from the quality of the representations that remembering and imagining respectively involve. Hume, for instance, sees remembering as differing from imagining with respect to the force and vivacity of the representations that each produces (Hume 1739/2011); Byrne (2010) has recently defended a similar view. The major problem faced by quality-based accounts is that, even if memories are more forceful and vivid than imaginings on average, they are not always more so, indicating that the account is unlikely to be tenable (Reid 1785/2002; Holland 1954; Pears 1990). Feeling-based accounts appeal not to the quality of memories but rather to the feelings that accompany them. James (1890/1983), for instance, suggests that remembering is accompanied by a feeling of warmth and intimacy; Russell (1921/2005) suggests that it involves feelings of familiarity and of pastness. These accounts face two major problems. The first is that, while the feelings in question might be characteristic of remembering, they are not exclusive to remembering (Kind 2022). The second is that feeling-based accounts, though suggestive, are vague to such an extent that it is difficult even to be confident that the relevant feelings exist (Teroni 2017).

Though quality-based and feeling-based accounts have been influential, both are challenged by recent *attitude-based* accounts. Robins (2020a), for instance, argues that only remembering involves an attitude of “seeming to remember”; McCarroll and Sant’Anna (2023) contrast the attitude of remembering, which takes a content to represent the actual past, and the attitude of imagining, which need not take a content to represent the actual past. The major problem for attitude-based accounts, debate over which is ongoing (Sant’Anna 2021a; Langland-Hassan 2022b; Goldwasser 2024; Diesel Werberich 2025), concerns instructive uses of imagination (Kind and Kung 2016), in which imaginings represent the nonactual world but are constrained by the actual world, indicating that imagining sometimes involves attitudes of the same sort as those involved in remembering (see Munro 2020).

Attitude-based accounts have also played a role in the broader continuism-discontinuism debate. This debate pits continuists, who react to empirical findings revealing the existence of surprising overlap between memory and imagination at the neurocognitive level by holding that memory and imagination do not differ in kind, against discontinuists, who hold that, despite the overlap, memory and imagination do differ in kind (Michaelian et al. 2024). Because the question of the continuity or discontinuity of memory and imagination admits of multiple interpretations (Rudnicki et al. forthcoming), the continuism-discontinuism debate has multiple dimensions. One concerns memory and imagination taken as mental

states: some contributors to the debate are, as just indicated, interested primarily in the attitudes respectively involved in memory and imagination, whereas others focus on the relationships respectively borne by remembering and imagining to their objects (see section 5.1). A second dimension concerns memory and imagination taken as cognitive processes; here, contributors have emphasized the role of causation in remembering, taking the question of the continuity or discontinuity of memory and imagination to be tightly linked to the causalism-simulationism debate (Michaelian 2016a; Langland-Hassan 2023; cf. Mahr & Schacter 2024).

A third dimension concerns the epistemic roles of memory and imagination; here, contributors have examined differences between the ways in which memory and imagination are constrained (Hopkins 2014, 2018, 2022; Arango-Muñoz & Bermúdez 20218; Sant’Anna 2023; Robins 2023b; Goldwasser 2024; Nanay forthcoming) and how such constraints enable them to generate or prevent them from generating new knowledge (Miyazono & Tooming 2022, 2024, 2025; Tooming & Miyazono 2024). A fourth dimension concerns the linguistic behaviour of the verbs ‘remember’ and ‘imagine’: continuists have made a case against the factivity of remembering (De Brigard 2017) and argued that, insofar as their truth-conditional and grammatical profiles are concerned, ‘remember’ behaves as a restricted case of ‘imagine’ (Liefke 2024); discontinuists, of course, have pushed back against these arguments (Rudnicki forthcoming). The final dimension of the debate concerns difficulties involved in basing philosophical conclusions on the empirical evidence that gave rise to the debate in the first place, with most authors arguing that this evidence points to both similarities and differences between remembering and imagining and thus ultimately settles the debate neither in favour of continuism nor in favour of discontinuism (Perrin & Michaelian 2017; Camillo 2025a).

6.2 Episodic memory and semantic memory

Insofar as semantic memory is concerned, philosophers of memory have been interested primarily in the differences between its phenomenology and that of episodic memory (Perrin forthcoming). Their work on these differences owes a major debt to the psychologist Endel Tulving, who first introduced the distinction between episodic and semantic memory (Tulving 1972). Tulving initially defined episodic memory as memory for the “what”, the “when”, and the “where” of the events of the personal past. He eventually came to hold, however, that episodic memory is characterized by *autonoetic consciousness*, in which the subject “relives” a past experience and is aware that his present experience is related to that experience “in a way that no other kind of experience is” (Tulving 2005, 15), whereas semantic memory is characterized by *noetic consciousness*, in which the subject is merely aware of facts, including facts about the events of the personal past (Tulving 1985; see Andonovski 2023; Hoerl & McCormack 2024). In practice, philosophers have had little to say about the phenomenology of semantic memory and have focussed almost exclusively on the phenomenology of episodic memory. There have been critiques of Tulving’s definition of episodic memory in terms of autonoesis (De Brigard 2024), but work in the general spirit of that definition has nevertheless given rise to multiple accounts of the phenomenology of episodic memory (Sant’Anna et al. 2024).

Epistemic accounts hold that the characteristic phenomenology of remembering is explained by the fact that memory is a distinctive type of epistemic state, perhaps the retention of apprehension (Martin 2001) or the retention of an ability to know what it was like to experience something (Soteriou 2008; Hoerl 2022). These accounts are attractive insofar as they offer a straightforward explanation of how memory can be a source of knowledge. Like epistemic approaches to confabulation and to remembering itself, however, they are difficult to reconcile with naturalism and consequently have been relatively unpopular (Sant’Anna et al. 2024). *Metacognitive* and *representational* accounts sit better with naturalism and have enjoyed correspondingly greater popularity. Metacognitive accounts, on the one hand, focus on metacognitive states that accompany episodic memories, such as episodic feelings of knowing (Dokic 2014; 2022), feelings of pastness (Perrin et al. 2020), and feelings of reality (Pedrini forthcoming). Their key advantage is that they appeal to cognitive processes thought to underlie the capacity to distinguish memories from other mental states. Their key disadvantage is that the feelings in question seem not to be available to introspection (Pan

2022; Hoerl 2022). Representational accounts, on the other hand, focus on features of episodic memories themselves, such as their contents (Dokic 2001; Fernández 2019; Rowlands 2018; Hoerl 2001) and attitudes (Mahr & Csibra 2018; Teroni 2018, 2022). Their key advantage is that they align well with [intentionalist approaches to consciousness](#), which are among the most influential approaches to consciousness in the philosophical literature and which posit a tight relationship between representational features and phenomenology. Their key disadvantage is that the phenomenology of remembering appears to be sensitive not to features of retrieved representations but rather to features of the retrieval process that produces them (Perrin & Sant’Anna 2022).

6.3 Memory and dreaming

Whereas the battle lines among the competing approaches to the relationships between episodic memory and imagination and between episodic and semantic memory are, by now, well established, because philosophers of memory have only recently turned their attention to the relationship between episodic memory and [dreaming](#), the core issues and positions in this area still in the process of being defined. Work in this area so far has focussed on a set of three issues. The first concerns remembering dreams, including the role of memory in generating dream reports (Windt 2013; Rosen 2024a,b; Sant’Anna 2024b; Demšar & Windt 2024; Wu 2026; Alcaraz Sánchez forthcoming), the accuracy and phenomenology of memories of dreams (Occhionero & Cicogna 2016; Pantani et al. 2018), and the very possibility of genuinely remembering dreams (Copenhaver 2024). The second issue is the possibility of remembering in dreams, with some authors arguing that this is indeed possible (James 2024) and others expressing scepticism (Gregory 2024). The final issue concerns respects in which remembering and dreaming might be similar (see Dranseika 2024), with some authors focussing on perspective (Rosen & Sutton 2013; Soteriou 2024), the feeling of pastness (Barkasi 2024b), and perceptual features (Macpherson 2024) and others seeking a criterion for distinguishing remembering from dreaming and imagining (Bernecker 2024).

7. The evolution of episodic memory

This article has alluded in several places to the naturalistic orientation that predominates in contemporary philosophy of memory. The naturalistic orientation is particularly visible in philosophers’ work on the evolution of episodic memory. Drawing heavily on relevant empirical research, this work has concentrated on the evolutionary function of episodic memory (section 7.1) and on its potential existence in nonhuman animals (section 7.2).

7.1 The function of memory

Philosophers of memory have proposed a range of accounts of the function of episodic memory (Brown forthcoming a). The most natural accounts are *past-oriented*, in that they take the function of episodic memory to be that of storing information about events experienced in the past. In support of past-oriented accounts, their advocates have appealed to the role played by episodic memory in different forms of learning. Boyle (2019, 2022), in particular, argues that episodic memory allows us to acquire new information about past events by revisiting memories of them, while Brown (2024) argues that episodic memory supports “unrestricted learning”, the ability of the subject continually to improve his model of the environment. These forms of learning, proponents of past-oriented accounts emphasize, contrast with the type of learning afforded by semantic memory, thus offering an explanation of why episodic memory might have evolved (Boyle 2019, 2022; Brown 2024). Past-oriented accounts are opposed by *future-oriented* accounts, which, while perhaps less natural, have the advantage of facilitating an explanation of the constructive character of remembering and of the overlap between episodic memory and episodic future thought. These accounts take the cognitive system that subserves both episodic memory and episodic future thought to have evolved to enable the subject to imagine future events (De Brigard 2014a; Michaelian 2016c; cf. Schulz & Robins 2023).

Both past-oriented and future-oriented accounts are opposed by *social* accounts. These accounts appeal to a variety of social factors in order to understand the function of episodic memory. Thus Mahr & Csibra (2018) argue that episodic memory represents the justificatory relationships between memories and past experiences in the service of a communicative function, while Keven (2023, 2024) focusses on the storage by episodic memory of information about the behaviour of others, which enables subjects to identify trustworthy partners. Despite the apparent mutual incompatibility of past-oriented, future-oriented, and social accounts, Dreier (forthcoming a) suggests that it might be possible to reconcile them, defending a view on which the past-oriented function of episodic memory is prior to its future-oriented and social functions but on which it does indeed have all three functions (cf. Vieira Rodrigues 2025).

7.2 Memory in nonhuman animals

While there is, as pointed out in section 1, controversy about the legitimacy of the concept of episodic memory, the claim that, given that that concept is indeed legitimate, it can be applied to human beings is uncontroversial. The claim that it can likewise be applied to nonhuman animals, in contrast, has been a source of considerable controversy. This is for the straightforward reason that, if there is empirical evidence that strongly suggests that many animals are capable of the kind of what-when-where memory initially singled out by Tulving (see Boyle & Brown 2025), there is no direct evidence that they are capable of enjoying the kind of autoegetic consciousness that he later came to see as being essential to episodic memory (though see Dreier forthcoming b). Thus, while Boyle (2020; cf. Schwartz & Boyle forthcoming) develops a framework for behaviorally detecting autoegetic consciousness in animals and Malanowski (2016) critiques definitions employed in research on episodic memory in animals, philosophers have tended to be sceptical about the idea of animal episodic memory. Keven (2016), for example, has argued that episodic memory involves inferential content of a sort of which animals are incapable, while Hoerl and McCormack (2019) contend that it involves temporal reasoning of a sort of which they are incapable. This tendency towards scepticism is, however, merely a tendency, and Boyle (2023), in particular, has defended a pluralist approach on which the question of the existence of animal episodic memory can be answered only relative to the theoretical goals of a given research programme (cf. Schwartz 2020).

8. Affect in remembering

Affect in remembering has been less visible than the topics addressed in the foregoing sections, but there is now a substantial body of work concerning the nature of affective memory (section 8.1), memory-related emotions such as grief and nostalgia (section 8.2), and the relationship between trauma and memory (section 8.3).

8.1 Affective memory

As Teroni (2022, forthcoming) points out, whereas psychologists are interested primarily in causal relationships between memory and affect, investigating, for example, the enhancement of memory due to the modulation of attention by emotional salience, philosophers are interested primarily in potential constitutive relationships between them. They have thus debated the existence and nature of *affective memories*, where an affective memory is one that is partly constituted by an affective state (Trakas 2021c; Retkoceri 2022; Bickel 2026). Sceptics about the existence of affective memories hold that apparent affective memories are not in fact constitutively affective but are, instead, simply nonaffective memories that trigger accompanying affective states (Debus 2007); realists contend that apparent affective memories are in some cases indeed constitutively affective (Arcangeli & Dokic 2018; Trakas 2022; Todd 2023). Though realists agree about the existence of affective memories, they disagree among themselves about their nature. Arcangeli and Dokic (2018) take affective remembering to result from the interplay of episodic remembering and constrained imagination. Trakas and Todd, in contrast, argue that “quasi-emotions” (Trakas 2022) or “as-if emotions” (Todd 2023) might shed light on why emotions can be

experienced in remembering without exhibiting all of the characteristics of nonmnemonic emotional experiences.

In addition to the debate on affective memory, there is work on the affective value of memories. Schechtman (2022), for instance, focusses on “treasured memories”, such as a memory of one’s last encounter with a loved one who passed away. Acknowledging that such memories often involve negative feelings, she argues that they may nevertheless be valuable in virtue of the sense of psychological connectedness that they afford. McCarroll and Kirby (2023), meanwhile, investigate the role in remembering of emotionally significant physical items, such as family heirlooms. Treating these as “evocative objects” (see Heersmink 2018), they examine cases in which the restoration of items functions as the focal point for affectively-charged remembering. Sant’Anna (2024a), finally, focusses on the aesthetic character of memories. Viewing certain autobiographical memories as having a narrative structure, he argues that they are valued in virtue of their pleasurable character.

8.2 Nostalgia and grief

While research on affective memory looks at whether certain memories are constitutively affective or emotional, research on nostalgia looks in part at whether nostalgia is necessarily mnemonic. Interestingly, while it is natural to suppose that there is necessarily a link between nostalgia and memory, philosophers have often argued that there is not. Observing that one can experience nostalgia with respect to events that one did not experience or that one is currently experiencing but knows will come to an end, for example, some have suggested that certain kinds of nostalgia may rely on imagination rather than memory (see De Brigard 2018; Berninger 2022, 2024, forthcoming; cf. Howard 2012). Assigning a central role to imagination, others have argued that only imagination can synthesize and unify the representation of different remembered events in such a way that they can be experienced nostalgically (Casey 1987). And, weakening the link between nostalgia and memory even further, others have argued that nostalgia is not even fundamentally past-oriented, characterizing it, instead, as being an emotional response to change (Sweeney 2020). There is, nevertheless, a case to be made for the existence of an important link between nostalgia and specific forms of embodied memory (Trigg 2025; see section 10.1).

Just as philosophers have examined the link between memory and nostalgia, they have examined the link between memory and grieving. Debus and Richardson (2022) develop an explanation of the existence of different types of affective reactions in grieving in terms of the dual nature of episodic memory phenomenology, which affords awareness of remembered objects as both present and absent. Shardlow (2024) develops an explanation of disruptions in temporal awareness in grief in terms of the different forms of temporal perspective-taking afforded by the process of grieving. And Cholbi and Markovic (forthcoming) examine the process of “memory building”, in which one deliberately turns one’s attention towards the deceased person with the aim of modifying one’s relationship to him. Broadening the focus from episodic memory to mental time travel in general, McCarroll and Yan (forthcoming) investigate the role of episodic future thought in shaping anticipatory grief (cf. Wood forthcoming). Shifting the focus from episodic memory to embodied memory, Fuchs (2018) and Ratcliffe (2023) look at how body memories and habits of thought formed by one’s interactions with the deceased person shape the grieving process.

8.3 Trauma and memory

Two bodies of research on trauma and memory can be distinguished: on the one hand, philosophers have investigated the involvement of specific forms of memory in trauma; on the other, they have raised normative questions about traumatic memories.

As far as the involvement of specific forms of memory in trauma is concerned, the existence of an important connection between trauma and episodic memory, in particular, is widely assumed in the

literature, with some authors seeing episodic memory as being constitutive of trauma (Margalit 2004). The connection between trauma and the kind of observer memory discussed in section 5.2 above has been of particular interest, as a number of authors have argued that remembering from an observer perspective may have epistemic and adaptive benefits in trauma (Fernández 2015; McCarroll 2017; Frise 2024). Focussing on the influence of trauma on remembering rather than remembering on trauma, other authors have looked at how trauma may disrupt both remembering and psychological capacities that depend on it, such as agency, self-reflection, narration, and temporal awareness (Maiese 2024; Byrne 2025; Walsh forthcoming). The importance of the relationship between trauma and episodic memory has, however, been downplayed by others, who instead highlight the connection between trauma and body memory (Fuchs 2012; Brison 2018) or argue that some cases of trauma are to be explained in terms of imagination rather than memory (Carlisle forthcoming).

As far as normative questions about traumatic memories are concerned, the topic that has received the most sustained attention here is certainly the ethics of memory modification (Liao 2017; Yang 2025), as researchers have described the potential detrimental effects that modification of traumatic memories might have on rememberers' autonomy, their self-understanding, and their understanding of reality (Liao & Wasserman 2007; Aoki 2008; Erler 2011; Zawadzki & Adamczyk 2021a,b; Zawadzki 2023; Vukov 2022; Leuenberger 2022) and the moral and social costs incurred by memory modification techniques (Hurley 2010a,b; Cabrera & Elger 2016). Other work considers potential forms of injustice associated with trauma and memory (Puddifoot 2026, forthcoming), including mnemonic forms of epistemic injustice (Puddifoot 2021; Puddifoot & Sandelind 2024; Christoff 2024), harm to others resulting from disruptions in memory due to trauma (Trakas & Puddifoot 2023), and the role of misconceptions about remembering in promoting testimonial forms of injustice (Springle et al. 2023; Goldwasser & Springle forthcoming). Davies and Stoneham (2025), finally, consider whether asking trauma sufferers to remember and relate their experiences may harm them.

9. Nonepisodic memory

Section 1 observed that philosophers have been interested, first and foremost, in episodic memory, and it is to that kind of memory that the bulk of this entry has accordingly been devoted. There is, however, considerable philosophical work on procedural memory (section 9.1) and some on working memory (section 9.2) and prospective memory (section 9.3). Before delving into this work, it should be noted that there is a need for additional work both on these kinds of memory and on others. Particularly noteworthy is the lack of work on semantic memory (though see Gentry 2025) and on autobiographical memory (though see Hoerl 2007; Guerrero Velázquez 2021; Zaccaro 2025).

9.1 Procedural memory

Philosophers have investigated a range of issues concerning procedural memory, a form of nondeclarative memory dedicated to habits and skills. Two of these issues are broadly taxonomic. The first concerns the representational nature of procedural memory. Though some philosophers have defended the view that procedural memory is distinguished from declarative memory in part by the fact that it does not involve storage of content (Michaelian 2011b), this view has been challenged by others, who maintain that procedural memory cannot be adequately described without invoking stored content (e.g., Bielecka & Miłkowski forthcoming; Christensen et al. 2016; De Brigard 2019; Pavese 2019, 2026). The need to invoke stored content is convincingly illustrated by the case of motor apraxia, a deficit in the ability to execute planned motor actions: in one type of motor apraxia, ideomotor apraxia, subjects are able to identify and perform motor actions when cued, suggesting the presence of stored content (Najenson 2024). The second issue concerns the relationship between procedural memory and knowledge how. While it is intuitively plausible that the distinction between knowledge-that and knowledge-how maps onto the distinction between declarative memory and procedural memory, this mapping has been questioned. De Brigard (2019) argues that the standard psychological taxonomy of memory is problematic and hence does not offer

support for the folk distinction between knowledge-that and knowledge-how. Pavese (forthcoming) similarly argues that procedural memory lacks a variety of distinctive features of knowledge-how (but see Springle 2019).

In addition to these taxonomic issues, several other issues have begun to attract attention. The first is whether procedural memory is sufficient to account for skilled performance (Kaplan forthcoming). There is a long tradition in psychology that views skills as being largely automatic, which suggests a natural connection to procedural memory, but this view has been questioned. Christensen et al. (2019), for instance, argue that skilled performance is not fully automatic and thus requires the involvement of declarative memory, and Pavese (forthcoming) similarly argues that skilled performance is flexible in a way that requires cognitive operations that draw on declarative memory. The second is whether procedural memory might be false. Retkoceri (2021) makes a case for false procedural memory by examining cases in which one tries to remember how to do something but fails to do so and cases in which one tries to remember how to do something but remembers how to do something else. The final issue is whether the kind of collective memory discussed in section 10.2 below might be procedural. Donahue (2024) analyzes the concept of collective procedural memory in terms of a group's ability to remember how to do certain things.

9.2 Working memory

Working memory refers to the capacity for maintaining and manipulating information in way that informs goal-directed behaviour. Psychologists have offered competing accounts of the nature of and mechanisms responsible for working memory (see Gomez-Lavin forthcoming), but philosophers have been especially interested in its relationship to consciousness. Prinz (2012) argues that consciousness arises from the modulation of sensory representations by attention in a way that makes them available to working memory. Carruthers (2015), in contrast, argues that working memory is the central workspace in which consciousness occurs. They have also been interested in the status of working memory as a natural kind. In opposition to Carruthers, Gomez-Lavin (2021) argues that working memory merely redescribes central cognitive processes and that it therefore cannot explain those processes. He has gone on to argue that, rather than the elimination of the construct working memory, what is needed is the adoption of a pluralist approach on which the construct is a “mosaic-like” entity reflecting the different ways in which information can be maintained and manipulated by the mind (Gomez-Lavin 2025). Feest (2011, forthcoming), meanwhile, has taken working memory to illustrate her thesis that the kinds at issue in empirical research are often “epistemically blurry”.

9.3 Prospective memory

Prospective memory refers to the capacity to remember to execute a previously planned action. There is empirical research on a range of aspects of prospective memory, but philosophers have been interested primarily in the question how intentions might be stored and retrieved. According to the doxastic account, prospective memory is a matter of storing a belief about one's intention to realize an action and retrieving that belief to form an occurrent intention to realize that action in the present (Mele 2007). According to the state-transition account, prospective memory is a matter of representing the action one intends to perform; remembering an intention is simply remembering the action in question (Grünbaum and Kyllingsbæk 2020). Given that the state-transition account supports the view that prospective memories can be automatically retrieved, whereas the doxastic account seems to entail that an extra step of practical deliberation is required to move from remembering to forming an intention, these accounts would seem to be mutually incompatible (Grünbaum forthcoming).

10. Technological and social dimensions of memory

This entry has, up to this point, been concerned almost exclusively with remembering, whether episodic or nonepisodic, taken as something done by individuals on their own. This final section turns to work on remembering taken as something that individuals do in conjunction with technological resources (section 10.1) and with each other (section 10.2).

10.1 4E cognition and memory

The approaches to cognition as [embodied](#), embedded, extended, and enactive that make up the “4E cognition” framework are now well established and have been applied to memory along with other cognitive capacities. There is thus a significant body of work on embodied remembering (Sutton & Williamson 2014; Dorsch 2025) and on a variety of other kinds of remembering in which the body plays an important role, including body memory (Fuchs 2012; Summa et al., 2012; Breyer 2021), kinetic memory (Trakas 2021b), and Rilkean memory (Rowlands 2015, 2017; Leyva 2018; Piñeiro 2023; Bassford 2025; Waissbluth Kingma 2025). And there is a very sizeable body of work on external memory from the perspective of the extended mind hypothesis.

The wide-ranging and multidisciplinary character of this work means that no comprehensive overview of it can be provided here (see Heersmink & Michaelian forthcoming), but it should be noted that memory has figured prominently in the literature triggered by the extended cognition hypothesis since Clark and Chalmers (1998) appealed, in their argument in support of the hypothesis, to a thought experiment involving a subject who, suffering from Alzheimer’s disease, makes use of a form of external memory meant to be functionally analogous to internal or biological memory. While some responded to Clark and Chalmers by arguing that external memory is fundamentally disanalogous to internal memory (Adams & Aizawa 2008; Rupert 2009, 2013; Michaelian 2012), others examined the nature of external memory in its own right (Heersmink 2013, 2016; Sutton 2010a), and researchers have gradually come to focus less on the question of analogies and disanalogies between external and internal memory and more on their interactions (Arango-Muñoz 2013; Clowes 2013; Colaço forthcoming b; Crozatier 2026; Fabry 2023; Heersmink 2015, 2017a, 2022). Recent work in this vein has taken an applied turn, emphasizing the implications for memory of new technologies, including smartphones (Juchniewicz 2021; Fanti Rovetta 2025), artificial intelligence (Smart et al. forthcoming; Telakivi forthcoming), virtual avatars (Fanti Rovetta & Valentini forthcoming), and brain-computer interfaces (Farina et al. forthcoming). There is also considerable work exploring the ethical and epistemological implications of the use of these and older forms of external memory (e.g., Carter & Kallestrup 2016; Clowes et al. 2024; Faulkner 2022; Fu & Mei 2026; Heersmink 2017b; Heersmink & Carter 2020; Kallestrup 2024; Montefiore 2026; Palermos 2022). As new external memory technologies continue to develop and become more widespread, such work will undoubtedly take on increasing practical relevance.

10.2 Collective memory

Whereas work on external memory from the perspective of the extended mind hypothesis considers cases in which an individual and a technological resource might constitute a system that remembers, work on collective memory considers cases in which a group of individuals might constitute such a system. Work of the latter sort—which is to be contrasted with work on how the groups within which individuals are embedded shape their capacities to remember (Mahr et al. 2023; Mahr forthcoming; McCarroll & Andonovski 2025; Caravà 2025)—has considered both small-scale and large-scale groups. Taking up the notion of a transactive memory system introduced by Wegner (1987), psychological research on memory in small-scale groups, such as couples, families, and work teams, has looked at the quantitative and qualitative shifts in how the past is represented to which the division of cognitive labor characteristic of transactive memory systems gives rise. Philosophical research, meanwhile, has looked at issues including emergence in transactive memory systems (Theiner 2010, 2013; Tollefsen et al. 2013; Kirchhoff 2016; Huebner 2016; Arango-Muñoz & Michaelian 2020) and whether and how such systems can be accounted for within the 4E cognition framework (Heersmink & Sutton 2020).

Research on large-scale groups, such as nations and cultures, has asked whether memory can plausibly be attributed at the level of the group (Yamashiro & Yao forthcoming). Some authors have endorsed the weak thesis that collective remembering is ultimately the manifestation of individual cognitive capacities in social settings (Wilson 2018; Blustein 2022); others have argued for the strong thesis that large-scale groups are the literal subjects of the relevant memories (Michaelian & Sutton 2019). A range of other issues pertaining to large-scale collective memory have also attracted philosophical attention, as authors have explored the impacts of media on how groups remember the past (Barash 2016, 2021), the role played by collective memory in shaping cultural, social, and personal identity (Seeman 2019; Heersmink 2023), and the contributions of public commemorations to political goals (Satne 2022; Ingerslev forthcoming; Lim forthcoming).

Collective memory, both small-scale and large-scale, is a prominent theme in the multidisciplinary field of memory studies but has so far enjoyed relatively little prominence in philosophy; it is to be hoped that philosophers of memory will contribute more actively to the field in the future.²

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Other Internet Resources

- [Teaching resources from the Philosophy of Memory Organization](#)
- [PhilMemBib: A Comprehensive Philosophy of Memory Bibliography](#)
- [The Memory Palace substack](#)

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