



The Philosophical Contribution of the Preservationism vs. Generativism Debate and the Epistemic Roles of Memory

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Abstract: This article defends the thesis that the primary philosophical contribution to the cognitive science of memory, especially through the epistemological debate between preservationism and generativism/simulationism, lies in unveiling memory's epistemic multifunctionality. Instead of resolving which view is correct, philosophy demonstrates that memory serves diverse "epistemic games"—such as the faithful recording of the past, adaptive simulation for the future, and the construction of identity. By articulating this functional plurality, philosophy redefines problems for scientific investigation, critiques reductionist models that ignore this complexity, and suggests future studies focused on how different mnemonic mechanisms serve distinct objectives of knowledge and action. Thus, philosophy acts as a conceptual compass, fostering a richer and more nuanced understanding of memory, guiding science beyond simplistic dichotomies toward the functional complexity of mnemonic processes. This approach highlights philosophy's role in enriching the empirical agenda, ensuring that scientific investigation is informed by the multiple ways memory undergirds our epistemic lives.

Keywords: *Philosophy of Memory; Cognitive Science; Epistemology of Memory; Preservationism; Generativism; Epistemic Multifunctionality*

1. Introduction

Memory, a ubiquitous and fundamental phenomenon of human cognition, permeates virtually every aspect of our existence, from the construction of our personal identity and the ability to learn from the past to our capacity to navigate complex social interactions and project ourselves into the future. Given its centrality, understanding memory has been a core endeavor for both philosophy, since classical antiquity,¹ and cognitive science, in its various empirical branches.² In this interdisciplinary scenario, philosophy, with its eminently theoretical and conceptual approach, plays an irreplaceable role, not by generating experimental data, but through its capacity to define and refine problems, critically analyze the assumptions and internal coherence of scientific models, and suggest new avenues of investigation (Michaelian, Dranseika, & Álvarez, 2021).

At the heart of contemporary philosophical discussions about memory lies a fundamental epistemological clash: the tension between preservationist and generativist (or simulationist) views. On one hand, preservationism maintains that the primary function of memory is to faithfully retain and reproduce past information or experiences, emphasizing the need for an appropriate causal connection³ with the original event for a mental representation to count as a genuine recollection (Openshaw, 2023). On the other hand, generativism, particularly in its more recent simulationist variants,⁴ conceives of memory as a fundamentally constructive or generative process, intrinsically linked to imagination,⁵ where remembering involves a simulation of the past that can be flexible and adaptive, but not necessarily a faithful copy of the original experience (Michaelian, 2024; McCarroll, 2020). This debate, far from being a mere terminological dispute,

¹ Early philosophical inquiries into memory include Plato's metaphors of the wax tablet (*Theaetetus*) and aviary (*Theaetetus*), and Aristotle's *De Memoria et Reminiscentia*, which distinguished between memory (mneme) and recollection (anamnesis).

² Foundational models in cognitive psychology, such as the multi-store model by Atkinson, R. C., & Shiffrin, R. M. (1968). Human memory: A proposed system and its control processes. In Spence, K. W., & Spence, J. T. (Eds.), *The psychology of learning and motivation* (Vol. 2). Academic Press, significantly shaped early empirical investigations of memory.

³ The causal theory of memory, which underpins many preservationist views, received a classic formulation in Martin, C. B., & Deutscher, M. (1966). Remembering. *The Philosophical Review*, 75(2), 161-196.

⁴ For further discussion on how episodic memory supports future-oriented thinking and adaptive simulation, see Schacter, D. L., Addis, D. R., & Buckner, R. L. (2007). Remembering the past to imagine the future: the prospective brain. *Nature Reviews Neuroscience*, 8(9), 657-661. This work elaborates the "constructive episodic simulation hypothesis."

⁵ The close link between memory and imagination is supported by neuroimaging studies indicating shared neural substrates. For a review, see Addis, D. R., Pan, L., Musicaro, R., & Schacter, D. L. (2009). Common and distinct neural correlates of episodic memory and imagination: A meta-analysis of fMRI studies. *Neuropsychologia*, 47(11), 2233-2246.

has profound implications for how we understand memory's reliability, its relationship to truth, and its role in our epistemic lives (Sant'Anna, McCarroll, & Michaelian, 2023).⁶

This article defends the thesis that the primary philosophical contribution to the cognitive science of memory, especially through the lens of the epistemological clash between preservationism and generativism, lies in its unique capacity to unveil, articulate, and normatively frame the epistemic multifunctionality of memory. We maintain that, instead of seeking a definitive resolution favoring a single theory, philosophy, by critically engaging these perspectives, redefines problems, critiques unidimensional scientific models, and suggests paths for future investigations. It does so by illuminating the diverse "epistemic games" in which mnemonic processes are engaged, compelling cognitive science to recognize and investigate how different memory mechanisms serve distinct, and at times competing, objectives of knowledge, action, and identity. Philosophy, therefore, not only participates in the dialogue but actively shapes the scientific agenda by clarifying the explananda and the success criteria for a comprehensive theory of memory.

To support this thesis, the present article will be structured as follows: Section 2 will explore the core of the controversy: epistemologies of memory in dispute, detailing the arguments and implications of preservationism and generativism. Section 3 will present and defend the central thesis of the epistemic multifunctionality of memory, arguing how philosophy, through the debate, reveals this functional complexity. Subsequently, Section 4 will discuss the direct implications of this thesis for cognitive science, specifically in how it aids in defining more nuanced research problems, critiquing existing models, and suggesting promising future studies. Finally, the conclusion will reiterate the importance of the philosophical contribution as an indispensable normative and conceptual compass for advancing the scientific understanding of memory.

2. The Core of the Controversy: Epistemologies of Memory in Dispute

The philosophical investigation of memory, especially at its interface with cognitive science, is marked by a vigorous and persistent debate concerning the fundamental nature of remembering and its epistemological status. This debate, which has considerably deepened in recent decades, revolves around two main, often contrasted, conceptions: preservationism and generativism (or, in its contemporaneously more influential variants, simulationism). These conceptions do not merely offer alternative descriptions of mnemonic mechanisms but propose

distinct epistemologies for memory, with profound implications for how we assess its reliability, its relationship to truth, and the kind of justification it can provide for our beliefs about the past. Understanding the contours of this controversy is crucial for appreciating this article's subsequent thesis on the epistemic multifunctionality of memory.

The preservationist view, in its various formulations, is anchored in the powerful intuition that memory, in its paradigmatic functioning, primarily aims to preserve and faithfully re-present past experiences and information. In this perspective, the act of remembering is successful insofar as it accurately reproduces content that was previously encoded and stored, maintaining an essential continuity with the original event or learning. A central pillar of preservationism is the "appropriate causality condition," which posits that a current mental representation can only be considered a genuine recollection if it is appropriately caused by the past experience it represents. That is, there must be a memory trace (engram)⁷ that mediates the connection between the original experience and the subsequent act of remembering, ensuring that the recalled content effectively derives from the past.

Openshaw (2023), for instance, defends a form of preservationism, arguing in favor of the "previous awareness condition," according to which remembering an event or object requires having had a previous awareness of that event or object. This condition underscores the idea that memory is fundamentally retrospective and linked to an original epistemic experience. The emphasis, therefore, lies on memory's capacity to retain information over time, functioning as a repository that, ideally, protects mnemonic contents from distortion and loss.

From an epistemological standpoint, preservationism assigns memory a crucial role as a source of knowledge about the personal past and, by extension, about the world. The justification for memory-based beliefs would derive precisely from its capacity to preserve the truthfulness of original experiences. Thus, terms like "accuracy," "fidelity," and "authenticity" (in the sense of correspondence with the past fact) are central to the normative evaluation of memory from a preservationist perspective. A recollection is considered "good" or "reliable" if it accurately reflects what actually occurred.

However, preservationism faces significant challenges, especially in light of a vast array of empirical evidence from cognitive psychology demonstrating the fallibility and reconstructive

⁷ The concept of the "engram" or memory trace was introduced by Semon, R. (1921). *The Mneme*. George Allen & Unwin, long before its current neurobiological investigation.

nature of human memory.⁸ How can a theory prioritizing faithful preservation accommodate the ubiquity of memory errors, distortions, biases, and the phenomenon of false memories?⁹ If memory is primarily a system for storing and retrieving "copies" of the past, the explanation for these failures often resorts to mechanisms of interference, trace degradation, or retrieval errors, but it may struggle to explain the systematic and, at times, adaptive nature of certain reconstructions.

Phenomena like "observer memories," where individuals recall past events from a visual perspective they could not have originally had (Dranseika, McCarroll, & Michaelian, 2021), also strain the stricter formulations of preservationism, as the content of the recollection seems to contain elements that were not directly experienced. Furthermore, the very "feeling of pastness" that accompanies episodic remembering (Perrin & Sant'Anna, 2022) requires an explanation that goes beyond the simple reactivation of a trace, necessitating an articulation of how this phenomenal quality is generated or inferred.¹⁰

In contrast to the preservationist emphasis on faithful retention, generativism and, more specifically, simulationism, propose that memory is a fundamentally constructive or generative process. In this view, remembering is not so much a matter of "replaying" a stored trace but of (re)constructing a representation of the past at the moment of recall, utilizing a variety of available information, which may include fragments of past experiences, semantic knowledge, current beliefs, goals, and the context of remembering. Kourken Michaelian has been a prominent proponent of this perspective, arguing that "remembering is a form of imagining" the past (Michaelian, 2023a, 2024). According to simulationism, the same cognitive mechanisms that underlie the imagination of future or hypothetical events are involved in the "imagination" of past events that constitutes remembering.

⁸ Seminal work demonstrating the reconstructive nature of memory includes Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge University Press, particularly his "War of the Ghosts" experiment.

⁹ The malleability of memory and the implantation of false memories have been extensively studied. See Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior*, 13(5), 585-589.

¹⁰ Phenomenological accounts of time-consciousness, which are relevant to the "feeling of pastness," can be traced back to Husserl, E. (1964). *The Phenomenology of Internal Time-Consciousness* (J. S. Churchill, Trans.). Indiana University Press. (Original work published 1928).

For the simulationist, episodic memory, in particular, is a simulation of an experience, not the reactivation of a detailed record of that experience (Michaelian, 2024). McCarroll (2020) also explores the idea that remembering the personal past transcends the boundaries of simple imagination but does so by emphasizing the constructive aspects and the way the self-projects into the past. This perspective more naturally accommodates the fallibility and malleability of memory, viewing errors and distortions not merely as system failures but as byproducts of a flexible and adaptive cognitive mechanism.

Epistemologically, generativism/simulationism shifts the focus of memory evaluation. If remembering is a form of imagining, accuracy, in the sense of a point-by-point correspondence with the past, may not be the primary criterion of success or the main epistemic function. Instead, the emphasis may lie on the adaptive utility of memory for guiding present behavior and future planning (Cosentino, McCarroll, & Michaelian, 2022, on mental time travel and decision-making). "Mental time travel,"¹¹ the ability to mentally project oneself into both the past and the future, is a central concept here, suggesting a unified cognitive system for thinking about the non-present (Michaelian, Sakuragi, Openshaw, & Perrin, 2024). Thus, memory "accuracy" might be redefined in terms of its coherence, plausibility, or its capacity to support useful inferences and environmental adaptation, rather than strict fidelity to the past (McCarroll & Michaelian, 2023).

However, simulationism also faces its own epistemological challenges. If remembering is imagining, what is the difference between a genuine recollection and a confabulation¹² or a mere exercise of imagination about the past? Michaelian (2020, 2021, 2023b) addresses this question by arguing that the difference may lie in the reliability of the simulation process or in the "epistemic virtues"¹³ of the remembering agent, but the distinction remains a crucial point of debate. The question of how memories, understood as constructions, manage to refer to specific past events if there is no direct and continuous causal link with the original trace is also a complex problem, although there are simulationist attempts to account for reference (Openshaw & Michaelian, 2024). Additionally, simulationism needs to explain the distinctive phenomenology of memory—why

¹¹ The concept of "mental time travel" and its connection to episodic memory was significantly advanced by Tulving, E. (2002). Episodic memory: From mind to brain. *Annual Review of Psychology*, 53, 1-25.

¹² For a comprehensive neuropsychological and philosophical exploration of confabulation, see Schnider, A. (2008). *The confabulating mind: How the brain creates reality*. Oxford University Press. Another important contributor is Hirstein, W. (2005). *Brain fiction: Self-deception and the riddle of confabulation*. MIT Press.

¹³ The idea of "epistemic virtues" in memory aligns with broader discussions in virtue epistemology. See, for example, Sosa, E. (1991). *Knowledge in Perspective: Selected Essays in Epistemology*. Cambridge University Press.

does remembering *feel* different from imagining? Some authors propose that the phenomenology of remembering is a type of epistemic feeling (Perrin, Michaelian, & Sant'Anna, 2020), which signals the origin of the representation as being from the past, but the nature and reliability of this feeling are themselves objects of investigation.

The distinction between preservationism and generativism/simulationism, as outlined above, transcends a mere quarrel over the most appropriate definition of the term "memory" or a cataloging of different mnemonic phenomena. It represents a fundamental epistemological cleavage, with deep roots in how we conceive the relationship between the mind and the past, and the type of cognitive access we have to events that no longer exist. What is at stake is, ultimately, the primary function we attribute to memory within our cognitive architecture and, consequently, the normative standards by which we judge its success or failure.

The causalist-simulationist debate, mentioned by McCarroll, Michaelian, and Nanay (2024) and explored by authors such as Perrin (2022) and Michaelian (2022), is emblematic of this tension. For proponents of the centrality of an appropriate causal connection (generally aligned with preservationism), this link with past experience is what anchors the recollection to the original event, conferring upon it its status as a "genuine memory" and its capacity to provide knowledge about the past. Without this causal anchor, it is argued, it becomes difficult to distinguish a recollection from an imaginative construction that happens to resemble a past event, thereby undermining memory's capacity to be a reliable source of epistemic justification about what actually occurred. The integrity of memory as a guide to the past seems to depend, for this view, on the preservation of this causal lineage.

Simulationists, on the other hand, by questioning the necessity or even the centrality of this strict causal condition for any and all forms of remembering, open space for a conception of memory whose normativity is not exhausted by factual fidelity to an original trace. By proposing that remembering is a way of reliably imagining the past (Michaelian, 2021), they suggest that success criteria may include the plausibility of the simulation, its coherence with other beliefs and memories, its utility for present decision-making and future planning, or even the "epistemic virtues" of the remembering agent (Michaelian, 2023b). In this view, a memory "error" is not necessarily any deviation from the original record, but perhaps a simulation that fails to be adaptive, that is implausible, or that is generated by an unreliable process (as in pathological confabulation).

This divergence in normative standards has direct implications for how we interpret the phenomenology of memory. While the experience of remembering often presents itself with a sense of immediacy and authenticity—a "feeling of pastness" (Perrin & Sant'Anna, 2022)—that seems to endorse the idea of direct contact with the past, simulationists reinterpret this phenomenology. For them, this feeling may be an "epistemic feeling" (Perrin, Michaelian, & Sant'Anna, 2020), a type of metacognitive heuristic that signals the provenance of the mental representation as being "from the past," but which does not in itself guarantee its factual veracity in the preservationist mold. Whether this epistemic feeling is sufficient to functionally distinguish remembering from imagining, and to ground the epistemic authority of memory, remains a crucial challenge for simulationist approaches.

Furthermore, the tension reflects different emphases on the *purposes* of memory. If the primary purpose is to build a faithful archive of personal history and acquired knowledge, then deviations and reconstructions are problematic. However, if the purpose is to provide a flexible basis for understanding the present and anticipating the future, then the ability to reconstruct, update, and even creatively "distort" past information can be seen as a functionally adaptive characteristic, not merely a system failure. The capacity for "mental time travel" (Michaelian et al., 2024), which allows us to both revisit the past and prospect the future, suggests a functional interdependence that may be better accommodated by models not restricted to static preservation.

Therefore, the preservationism versus generativism/simulationism controversy is not just about "what memory is," but about "what memory is for" in a deep epistemic and adaptive sense. It forces us to confront the possibility that "memory" is not a unitary faculty with a single standard of success, but a complex set of processes that can be evaluated according to different criteria, depending on the context and the objective in question. As we will argue later, it is precisely by exploring the nuances and implications of this tension that philosophy can offer its most significant contribution to cognitive science, pushing it beyond simplistic models and toward a richer understanding of the epistemic multifunctionality of remembering. The persistence of the debate, far from indicating a sterile impasse, signals the depth of the issues at stake and the need for a more comprehensive conceptual framework to account for the complexity of human memory.

3. Central Thesis: Philosophy Unveiling the Epistemic Multifunctionality of Memory

The persistence and depth of the debate between preservationism and generativism/simulationism in the philosophy of memory, far from indicating a fruitless impasse or an inability of the discipline to reach consensus, paradoxically reveal one of its most vital contributions to cognitive science. As anticipated, the central thesis of this article is that philosophy, by articulating, stressing, and exploring the ramifications of these apparently antagonistic epistemologies, does not necessarily seek to crown one of them as the unitary and definitive description of memory. Instead, its fundamental and distinctive role is to unveil, articulate, and normatively frame the epistemic multifunctionality of memory. That is, philosophical inquiry, through rigorous analysis of the conditions of possibility, conceptual limits, and normative implications of each stance, illuminates the fact that "memory" is not a monolithic faculty serving a single epistemic purpose, but a complex set of capacities participating in different "epistemic games," each with its own criteria of success and utility.

The richness of the philosophical debate lies precisely in its capacity to make explicit the diverse, and at times competing, demands we place on our mnemonic systems. The preservationist insistence on fidelity, on the causal connection with the past (Openshaw, 2023), and on the accuracy of the record is not merely a theoretical preference; it reflects a deep intuition and a practical need for memory, in certain circumstances, to function as a reliable archive of our experiences and knowledge. On the other hand, the generativist emphasis on construction, flexibility, and the link with imagination (Michaelian, 2024; McCarroll, 2020) is not just an acknowledgment of memory's fallibility, but an appreciation of its capacity to transcend mere repetition to serve adaptation, creativity, and planning. Philosophy, by giving voice and argumentative structure to both emphases, allows us to see that these are not necessarily mutually exclusive descriptions of a single object, but can be characterizations of different *epistemic functions* that memory is called upon to fulfill. We propose that, through this dialectic, philosophy helps delineate at least three major epistemic functions of memory, each with its own normativities and relevancies. The first and perhaps most intuitive epistemic function of memory, the one that preservationism seeks to elucidate and defend, is to act as a system of faithful recording of the past, essential for testimony and historical anchoring.¹⁴ In this capacity, memory is conceived as a

¹⁴ The role of memory in the epistemology of testimony is a significant area of inquiry. For a foundational text, see Coady, C. A. J. (1992). *Testimony: A Philosophical Study*. Oxford University Press.

repository of experiences, facts, and learnings, whose primary epistemic virtue lies in its ability to retain information accurately and to reproduce it with a high degree of fidelity to the original event or information. This function is absolutely crucial in a vast range of contexts that permeate our cognitive and social lives. Consider, for example, episodic factual learning: remembering the name of a person just met, the location of an important object, or a specific instruction received. In such cases, memory's utility is directly proportional to its accuracy; a distorted or incomplete recollection can lead to significant practical errors. The ability to recall the "what, when, and where" of specific events is fundamental not only for everyday navigation but also for constructing a detailed autobiographical knowledge that serves as a foundation for our personal history. The importance of this faithful recording function transcends the individual sphere, playing a central role in the social function of testimony. In legal contexts, for example, the justice system often critically depends on eyewitness testimony, with the underlying expectation that the witness's memory can accurately record observed events. Similarly, in everyday social interactions, when we share information or recount experiences, there is a tacit presumption that we are accessing faithful mnemonic content. Philosophy illuminates and scrutinizes this function in several ways, central among them being the appropriate causality condition (discussed in the causalist-simulationist debate, see Perrin, 2022; Michaelian, 2022), which posits that a present mental representation qualifies as a genuine recollection only if it maintains an adequate causal link with the original experience, possibly mediated by an engram (Andonovski, 2024). Openshaw (2023), in defending preservationism and the "previous awareness condition," reinforces this need for an experiential and causal link. Furthermore, philosophy investigates how memory, conceived as a faithful record, justifies beliefs about the past and serves as a source of knowledge, and analyzes the epistemic status of the phenomenology of episodic memory, such as *autonoesis*¹⁵ (Sant'Anna, Michaelian, & Andonovski, 2024). The normative standards associated with this function are eminently focused on truth as correspondence: fidelity, accuracy, idealized completeness, absence of contamination, and temporal and spatial precision. Failures to meet these standards, such as forgetting or "unsuccessful remembering" (Sant'Anna, 2022), are seen as system defects concerning this specific function.

¹⁵ The term "autonoetic consciousness" was coined by Tulving, E. (1985). Memory and consciousness. *Canadian Psychology/Psychologie canadienne*, 26(1), 1–12.

In direct but complementary contrast, memory exhibits a second crucial epistemic capacity, vigorously illuminated by generativist and simulationist perspectives: to serve as an engine for adaptive simulation, prospection, and creative problem-solving. In this conception, memory's primary value lies not only in its ability to accurately reproduce the past but in its skill in flexibly and constructively using past information and experiences to navigate the present and, crucially, to anticipate and shape the future. Here, memory transcends the role of a mere archive to become a veritable mental laboratory. The most prominent manifestation of this function is prospection, or the ability to imagine and plan future events, intrinsically linked to "mental time travel" (Michaelian et al., 2024), where memory provides the "building blocks" to simulate future scenarios and make decisions (Cosentino, McCarroll, & Michaelian, 2022). This generative capacity is also indispensable for creative problem-solving, where the mind recombines stored information in new ways, and for social cognition and theory of mind,¹⁶ simulating others' mental states based on past experiences. Philosophy, especially through simulationism (Michaelian, 2024, 2023a; Michaelian, Perrin, & Sant'Anna, 2020), offers a robust theoretical framework for this function, viewing the mechanisms of episodic remembering as largely shared with imagination. In this context, the traditional notion of "accuracy" (McCarroll & Michaelian, 2023) is reassessed. The relevant normative standards are multifaceted: success can be measured by the adaptive utility of the generated simulation, questioning whether it helps the agent achieve goals or make more informed decisions. Furthermore, the plausibility and coherence of the simulated scenarios are crucial. The procedural reliability of the simulation mechanism is also an important criterion, as explored by Michaelian's (2021) "virtue theory of memory." Another standard is the flexibility and creativity evidenced in the ability to access and recombine information, and even computational efficiency can be considered. Therefore, generativist/simulationist philosophy reinterprets memory's constructive nature not as a flaw but as a fundamental characteristic of a cognitive system designed for flexibility, anticipation, and intelligent adaptation.

The third major epistemic function of memory, emerging as a complex nexus where the demands for preservation and generation meet, strain, and ideally integrate, is its indispensable role in the construction and maintenance of a narrative identity and self-coherence over time.

¹⁶ The link between episodic memory, mental time travel, and Theory of Mind development is explored in Perner, J., & Ruffman, T. (2005). Infants' insight into the mind: How deep? *Science*, 308(5719), 214-216.

Autobiographical memory, in particular, is not just a repository of past events or an engine for future simulation; it is the raw material with which we weave the story of who we are. This process is inherently selective and reconstructive. We continually select, emphasize, interpret, and reinterpret our past in light of our current beliefs, values, and new experiences. For a life narrative to be coherent, we often fill gaps with plausible inferences, a process that, in its everyday forms, can be functional, though it may depart from strict factual accuracy, as suggested by studies on confabulation (Michaelian, 2020, 2023b). McCarroll's (2020) discussion of the "presence of self in observer memory" also points to the reconstructive nature of autobiographical memories. It is in this identity function that the dynamic tension between preservation and generation becomes most palpable. On one hand, for our narrative identity to feel authentic, it needs to be anchored in actual past experiences (Function 1). On the other hand, a simple enumeration of veridical memories would be chaotic; generative processes (Function 2) are necessary to organize, impart meaning, and sometimes create a more positive or adaptive narrative. Philosophy contributes by exploring the complex relationship between memory, self, and narrativity, helping to distinguish between factual accuracy and narrative authenticity—a life story can feel "authentic" even without detailed correspondence with facts, as suggested by discussions like Michaelian and Sant'Anna's (2022) on authenticity versus alethism.¹⁷ Normative standards for this function include narrative coherence, a sense of personal continuity, the ability to find meaning and purpose, perceived authenticity, support for psychological well-being and social adaptation, and plausibility of the narrative. Therefore, memory's identity function requires an intricate dance between fidelity to the past and the creative freedom of reconstruction.

The relevance of philosophy, therefore, lies not merely in cataloging these functions as if they were empirical discoveries. Its singular contribution is more profound: through conceptual analysis and the exploration of tensions inherent in the preservationist-generativist debate, philosophy *articulates the very existence and normative legitimacy* of these multiple epistemic functions. It questions what it means for memory to "work well" in each of these contexts, revealing that success criteria are variable and function dependent. In doing so, philosophy moves the discussion beyond a search for a unitary "essence" of memory towards an appreciation of its

¹⁷ For broader philosophical discussions on the concept of authenticity that may resonate with "authenticisin" in memory narratives, see Taylor, C. (1991). *The Ethics of Authenticity*. Harvard University Press.

versatility and its multifaceted importance for cognition and human life. This understanding of memory as an epistemically multifunctional system, unveiled and normatively framed by philosophical inquiry, is what offers a new and richer framework for cognitive science itself, as will be explored in the next section. Philosophy, thus, not only refines concepts (such as "episodic memory" or "autonoesis," see Sant'Anna, Michaelian, & Andonovski, 2024) but redefines the scope and goals of scientific investigation into memory.

4. Implications of the Thesis of Epistemic Multifunctionality of Memory for the Cognitive Science Agenda

The thesis that philosophy, by articulating and stressing the preservationist and generativist views, unveils the epistemic multifunctionality of memory is not intended to remain a purely theoretical exercise or an abstract reclassification. On the contrary, its value lies fundamentally in its capacity to inform, guide, and enrich the empirical agenda of the cognitive science of memory. By providing a more nuanced conceptual framework about the diverse roles memory plays in our epistemic lives, this philosophical perspective has direct and concrete implications for defining research problems, for critiquing and developing cognitive models, and for suggesting new and promising lines of experimental investigation. Far from being a passive spectator, philosophy here proposes itself as an active partner in the construction of scientific knowledge about memory, fostering a dialogue that can lead to a more integrated and ecologically valid understanding of this central faculty.

Accepting the epistemic multifunctionality of memory propels cognitive science beyond overly general questions, such as "is memory a process of preservation or construction?". In their place, more refined and contextually sensitive research problems emerge, shifting the emphasis from "what?" to the "when, how, and why?" of memory's diverse manifestations. Instead of seeking a unitary theory that applies indiscriminately to all acts of remembering, research can focus on investigating, for example, under what specific conditions—be they task context, individual goals, emotional states, availability of cognitive resources, or social demands—memory operates predominantly according to the normative criteria of Function 1 (faithful record), Function 2 (adaptive simulation), or Function 3 (identity construction). The investigation into how different "mnemonic roles" are instantiated, as Andonovski (2021) discusses in relation to functionalism, becomes central. Another crucial question is how the mnemonic system arbitrates

or prioritizes among these different functions when their objectives are potentially conflicting in a given situation; for instance, how a person balances the need to accurately report a traumatic event (Function 1) with the need to integrate that experience into a coherent and non-debilitating self-narrative (Function 3), an arbitration that may involve complex executive control¹⁸ and metacognitive evaluation processes. Additionally, it becomes pressing to identify what are the distinct neural, behavioral, and phenomenological markers that might signal the activation or dominance of each of these epistemic functions, investigating whether "cognitive signatures" exist that allow us to infer which "epistemic game" memory is playing. The subjective experience of "presence" when recalling the past (Perrin & Barkasi, 2024) could be a marker for Function 1 or 3, while the feeling of fluency in generating future scenarios (Brouillet, Rousset, & Perrin, 2023, on motor fluency) might be associated with Function 2, and auto-noetic consciousness, characteristic of episodic memory (Sant'Anna, Michaelian, & Andonovski, 2024), may vary in intensity or quality depending on the engaged function.

This perspective also necessitates a refinement of the concept of mnemonic success. As highlighted by Lin et al. (2024) when discussing successful and unsuccessful remembering and imagining, what counts as memory "success" or "failure" becomes intrinsically relative to the epistemic function it is expected to fulfill. A memory that is highly "successful" for Function 3 (e.g., an autobiographical reconstruction promoting well-being and self-coherence) might be considered "unsuccessful" if judged solely by the standards of Function 1 (e.g., if it contains significant factual inaccuracies). This has direct implications for experimental design, requiring researchers to operationalize "success" more explicitly and in a manner functionally appropriate to the task at hand. McCarroll and Michaelian's (2023) discussion on "deconstructing accuracy" is particularly relevant here, suggesting that "accuracy" is not a monolithic standard but a concept that needs to be qualified in relation to the purpose of recollection. The very notion of "unsuccessful remembering" (Sant'Anna, 2022) may need to be contextualized in relation to the intended function.

¹⁸ Models of executive functions, crucial for arbitrating between memory's different roles, include Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., Howerter, A., & Wager, T. D. (2000). The unity and diversity of executive functions and their contributions to complex "frontal lobe" tasks: A latent variable analysis. *Cognitive Psychology*, 41(1), 49-100. See also Baddeley, A. D. (1996). Exploring the central executive. *The Quarterly Journal of Experimental Psychology*, 49A(1), 5-28.

Furthermore, the role of metacognition¹⁹ in modulating and evaluating these different epistemic functions emerges as a central research problem. Investigation turns to how individuals monitor and control their mnemonic processes in relation to these different goals and whether they are aware, even implicitly, that different "rules of the game" apply in distinct mnemonic situations. Inquiries into the nature and accuracy of metacognitive judgments—such as the feeling of knowing, the feeling of pastness (Perrin & Sant'Anna, 2022), confidence in memory (Sant'Anna, 2024, on the puzzle of alethic memory), or epistemic feelings in general (Perrin, Michaelian, & Sant'Anna, 2020)—in contexts engaging different epistemic functions become crucial, as metacognition may be the key mechanism allowing individuals to flexibly adapt their use of memory to the specific demands of each "epistemic game."

The thesis of epistemic multifunctionality also offers a robust criterion for the evaluation and critique of cognitive models of memory. Models conceived too unidimensionally, whether exclusively emphasizing trace storage and retrieval mechanisms or focusing solely on radical construction to the neglect of faithful recall capacity, can be deemed insufficient or incomplete. The multifunctional perspective demands that models aspire to greater comprehensiveness, seeking to explain how the same cognitive system, or a set of interconnected subsystems, can support this diversity of epistemic roles. The discussion of episodic representation and mental models (Andonovski, 2022) may need to be expanded to accommodate how these models are differentially constructed and utilized for different epistemic ends.

Consequently, there is a demand for models that incorporate mechanisms of flexibility and arbitration, explaining how the mnemonic system can transition between an operational mode prioritizing high fidelity and one favoring schematic reconstruction or creative inference. Such models should elucidate which processes control the selection and integration of different types of information—specific episodic details, generalized semantic knowledge, personal goals and values, current context—depending on the dominant epistemic function. The conception of engrams as dynamic and updatable "mental files"²⁰ (Andonovski, 2024) offers a promising avenue

¹⁹ A foundational framework for understanding metacognitive monitoring and control processes is presented in Nelson, T. O., & Narens, L. (1990). Metamemory: A theoretical framework and new findings. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Vol. 26, pp. 125-173). Academic Press.

²⁰ The "mental files" framework, applied here to engrams, has broader roots in philosophy of language and mind. See Recanati, F. (2012). *Mental Files*. Oxford University Press.

but needs elaboration to explain how these "files" are differentially consulted, utilized, and modified in service of the various functions, and how they relate to the idea of memory as simulation. The very nature of "causation in memory" (Andonovski, 2021) may need reassessment in light of different functions, questioning whether the necessity, reliability, or probability of the causal connection varies depending on whether the goal is faithful recording or adaptive simulation.

Future models will also need to more systematically integrate the influence of motivational, emotional, and social factors in modulating memory's epistemic functions. It is plausible that an individual's emotional state, intrinsic motivations, or social context demands can significantly influence which epistemic function is prioritized and how mnemonic processes are configured. Chiera et al. (2022) study on how the character-based dimension of stories impacts narrative processing, for example, suggests how content and structure factors might interact with memory's identity function (Function 3).

Even sophisticated models like those of "mental time travel" (MTT), which by nature already acknowledge the link between remembering the past and imagining the future (Michaelian et al., 2024), can be refined in light of the multifunctionality thesis. It becomes important to investigate how the MTT system internally differentiates, or how the agent metacognitively does so, between a retrospective simulation aiming at fidelity to a specific personal event (an aspect of Function 1 within MTT) and a more freely constructed prospective simulation to explore future possibilities (Function 2). The multifunctionality thesis encourages a deeper investigation into the subcomponents and distinct evaluation criteria within the MTT construct itself, and how it relates to the distinction and interaction between memory and imagination (Schirmer dos Santos, McCarroll, & Sant'Anna, 2023; Michaelian, Perrin, & Sant'Anna, 2020). The explanatory contextualism proposed by McCarroll, Michaelian, and Nanay (2024) for the causalist-simulationist debate can be seen as a step in this direction, recognizing that different explanatory contexts may highlight different aspects, and consequently functions, of memory.

The perspective of epistemic multifunctionality not only refines existing questions but also opens up a range of new and promising lines of empirical investigation. Firstly, it becomes fundamental to design contextual and comparative investigations that systematically manipulate contextual demands to preferentially engage different epistemic functions, comparing mnemonic performance and neural correlates in tasks requiring, for example, high factual accuracy, creative

problem-solving, or personal narrative construction. Such studies can help dissociate the underlying processes for each function. Concurrently, more studies on metacognition and functional modulation are needed, investigating how metacognitive judgments vary by epistemic task and whether they reflect functional adaptation, including how shared metamemory (Michaelian & Sakuragi, 2023) might influence these judgments. Research into whether individuals can be trained to optimize their mnemonic strategies also becomes pertinent.

Another important avenue is exploring the interaction between different memory systems (episodic, semantic, procedural, working memory) in supporting the diverse epistemic functions, questioning, for instance, how semantic knowledge influences autobiographical reconstructions or how working memory manages information during prospective simulations. The relationship between memory and perception (McCarroll, Michaelian, & Arango-Muñoz, 2021) can also be re-examined from this functional perspective. The developmental perspective is equally crucial, investigating how the ability to use memory for these diverse functions emerges and changes throughout life.

The clinical and neuropsychological implications are vast, suggesting investigations into how different neurological conditions or psychological disorders selectively affect memory's epistemic functions, potentially leading to more refined diagnoses and targeted interventions. Understanding phenomena like *déjà vu*²¹ (Andonovski & Michaelian, 2023; Perrin, 2023; Hirai, Hara, & Perrin, 2022) or *déjà vécu* (Perrin, Moulin, & Sant'Anna, 2024), and research on confabulation (Michaelian, 2020, 2023b), can benefit from considering which epistemic function or its monitoring might be operating atypically.

Finally, research can extend to collective memory²² and social processes, questioning how the multifunctionality of individual memory relates to collective phenomena (Michaelian & Perrin, 2023; Arango-Muñoz & Michaelian, 2020) and how the act of re-remembering²³ (Perrin, 2024) interacts with different epistemic functions, whether to enhance fidelity, refine adaptive utility, or update identity narratives.

²¹ For a review of cognitive and neuropsychological theories of *déjà vu*, see Brown, A. S. (2003). *The déjà vu experience*. Psychology Press.

²² The sociological foundations of "collective memory" were laid by Halbwachs, M. (1992). *On Collective Memory* (L. A. Coser, Ed. & Trans.). University of Chicago Press. (Original works published 1925 and 1950).

²³ The act of "re-remembering" and the dynamic, malleable nature of memory traces at a neurobiological level are central to the theory of memory reconsolidation. See Nader, K., Schafe, G. E., & Le Doux, J. E. (2000). Fear memories require protein synthesis in the amygdala for reconsolidation after retrieval. *Nature*, 406(6797), 722-726.

In sum, the thesis of the epistemic multifunctionality of memory, nurtured by philosophical analysis of the preservationist-generativist debate, acts as a catalyst for cognitive science. It not only offers a way to organize existing knowledge but, more importantly, functions as a heuristic engine, generating new questions, challenging existing models, and pointing to still underexplored empirical territories. By recognizing that memory is a servant of multiple epistemic masters, cognitive science can advance towards a deeper, more integrated, and ecologically valid understanding of one of our most vital mental faculties. Philosophy, in this sense, fulfills its role as a "midwife" to new scientific understandings, helping to refine the scientist's gaze on the complexity of the mental world.

5. Conclusion: Philosophy as a Normative and Conceptual Compass

Throughout this journey, we have defended the thesis that philosophy's fundamental contribution to the scientific study of memory, especially when examined through the lens of the persistent epistemological clash between preservationist and generativist views, lies in its singular capacity to unveil, articulate, and provide a normative framing for the epistemic multifunctionality of memory. We have argued that, instead of seeking a definitive resolution that anoints a single theory as the "correct" description of memory, philosophy, in its analytical and critical practice, illuminates the diverse and complex "epistemic games" in which memory is engaged. We have demonstrated how this faculty serves not only as a potentially faithful repository of past experiences (Function 1) but also as a dynamic engine for adaptive simulation and prospection (Function 2), and as a crucial foundation for the construction and maintenance of a coherent narrative identity (Function 3).

The dialectical tension between the demands for faithful preservation and the needs for flexible construction, far from representing a sterile impasse in philosophical inquiry, emerges as a productive and essential characteristic of this inquiry. It is precisely this tension, when explored with conceptual rigor, that allows philosophy to map the normative terrain of memory, making explicit the different criteria of success—be it factual accuracy, adaptive utility, or narrative coherence—that apply to each of its epistemic functions. Thus, the preservationism-generativism debate is not a symptom of a failure to reach consensus but a testament to philosophy's vitality in its task of refining concepts, disentangling complexities, and expanding the comprehensive horizon on mental phenomena.

In this sense, philosophy acts as a normative and conceptual compass for the cognitive science of memory. By clarifying the multiple *explananda*—that is, the different aspects and functions of memory that require scientific explanation—it helps direct the formulation of more nuanced and ecologically valid research problems. By highlighting the diverse standards of mnemonic success, it provides richer criteria for the critical evaluation of existing cognitive models and for the development of new theoretical architectures capable of accounting for memory's functional flexibility. And, by anticipating the theoretical implications of different approaches, it suggests new avenues for empirical investigation, encouraging the exploration of contexts, mechanisms, and manifestations of memory that might otherwise remain neglected.

The understanding of memory, in its totality, remains one of the great challenges for the mind sciences. The path ahead, undoubtedly, lies in the continuous and robust synergy between philosophical inquiry and empirical research. While cognitive science provides the data and mechanistic models that test and constrain philosophical theories, philosophy offers the conceptual rigor, normative analysis, and integrative vision that can help science not lose sight of the functional complexity of the phenomenon it investigates. The epistemic multifunctionality of memory, as delineated here, offers a frame of reference that, we hope, will continue to inspire a fruitful interdisciplinary dialogue, advancing our collective understanding of how the past informs the present and shapes the future, for both the individual and society. Memory, with its multiple faces and functions, will continue to be a privileged domain where philosophy and cognitive science can, together, advance the frontiers of knowledge.

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