

## **Title: An Action-First Account of Episodic Memory**

**Abstract:** Building off of a recent account of intentionality, the action-forward framework, we introduce a novel account of episodic memory and defend its plausibility as a how-possibly account of such memory. According to our account, episodic remembering consists in acts of performative retelling of the remembering subject's initial experience of an event where such retelling activates connected capacities for perceptual recognition of the event and its constituents. When such acts are overt, the remembering subject expresses their memory, say, verbally, imagistically, through performance, etc. where doing so reactivates those recognitional capacities. When such acts are covert, the remembering subject merely activates capacities for such expressions without going on to overtly express where doing so reactivates the relevant recognitional capacities. In §2, we introduce two desiderata on accounts of episodic memory. In §3, we give an overview of the action-forward framework for intentionality. In §4, we introduce our account of episodic memory. In §5, we show how the account satisfies the desiderata. We conclude by saying how the account differs from standard accounts in the literature while retaining what we take to be their insights.

**Keywords:** episodic memory; perception; imagination; first-hand knowledge; first-hand historytelling.

### **Introduction**

We begin with a story:

#### **IMANI'S THIRD BIRTHDAY:**

Imani and her mother, Mia, are cleaning the basement in Imani's childhood home. They come upon a box of VHS tapes, one of which is labeled "Imani's 3<sup>rd</sup> Birthday."

"Ha!" Mia exclaims, "What a birthday that was! Ugh, what a shame we only have this on VHS, or I'd play it for you...How about I tell you about it?"

Imani nods, and Mia proceeds to describe where the party took place and what it was like from her point of view, some of the people in attendance and what they did (or what baby Imani did to them), some of the memorable gifts Imani received and how she incessantly annoyed her father with one of them, etc.

What Mia is doing is something we've all done. We've all recounted an earlier time in our lives, often with friends or relatives. Sometimes, like Imani, they have little or no memory of the events. Sometimes we get to enjoy memories with friends and loved ones together, each person contributing details, some of which the other had but has since forgotten. Sometimes, our trips down memory lane start, like Mia's, with a prompt from someone else. Other times, we sit down for tea, take a bite of petit madeleine, and find ourselves plunged into detailed recollections of Aunt Léonie and childhood summers spent in Combray. Yet other times, we prompt ourselves and, with varying degrees of success, bring to mind the episode we're seeking or "more than that: [re]create" the episode (Proust 2005: 48). These are all instances of episodic remembering.

However familiar and easy to do (or be sucked into), episodic remembering is remarkable. Episodic memories somehow put us in touch with particular events in the personal past as well as those events' particular constituents. In a sense, they allow us to time travel, and not just to any abstract or generic past, but to *our own personal past*, as if they allow us to revisit earlier episodes in our lives and re-experience events we once witnessed. Although Mia cannot play the VHS tape of Imani's third birthday, if asked, she might be inclined to say that it's as if she's playing the video "in her head" or "in her mind's eye." How is such remembering possible? And what is it exactly that we're doing when we episodically remember?

This paper attempts to shed light on these questions by introducing a novel account of episodic remembering and defending it as a plausible account of such memory. To get there, we contrast it with three ways of addressing them, two of which have come to dominate the philosophy of memory. The first way is that of causalism, according to which a subject episodically remembers an event just in case she represents that event now, she perceptually experienced that event at some previous point in time, and her experience of that event bears the appropriate causal link to her current representation of it (for instance, see Martin and Deutscher 1966; Bernecker 2010; Werning 2020; *cf.* Ménager, Choi, and Robins 2022). The causalist answers to the questions just posed are as follows: episodic remembering is possible thanks to the activity of some neurocognitive system(s) whose parts include traces that have the evolved functions to encode events the subject perceptually experiences and to reactivate patterns of cortical activity at recall given the appropriate stimulus, sometimes referred to as a “cue.” And what is happening when we episodically remember is just activation of some trace(s) sufficient to reactivate a sufficiently similar pattern of cortical activity to that which occurred when we initially experienced the event.

The second way is that of simulationism, according to which a subject episodically remembers an event just in case she represents that event now and that representation is produced by some well-functioning episodic construction system(s) that aims to produce a representation of an episode belonging to her personal past (De Brigard 2014a,b; Michaelian 2016). The simulationist answers to the questions posed are as follows: episodic remembering is possible thanks to activity of the episodic construction system which has the evolved function of representing possible future events, counterfactual present events, and counterfactual and actual past events in ways that contribute to the subject’s efficacy as a planning agent over time. Episodic remembering, then, is merely one dimension of a multidimensional mental time travel system and what is happening when we episodically remember is the proper functioning of that system along the relevant dimension such that we are better able to act in the here-and-now in light of what we remember.

The third way, which is less popular but is gaining momentum, is that of enactivism, according to which a subject episodically remembers an event just in case she re-enacts her initial perceptual experience of that event, where such reenactment consists in activation of a “series of embodied procedures [...] through imaginative simulations based on neural reuse, neural reactivation, and the reactivation of embodied patterns of response (Caravà 2023: 2; see also Hutto and Myin 2013; Hutto and Peeters 2018; Michaelian and Sant’Anna 2019). The enactivist answers to the questions posed are as follows: episodic remembering is possible thanks to the retention of embodied procedures for reactivating sensorimotor contingencies tied to the event or for sense-making activities tied to the event and thanks to the possession of capacities for imaginative simulation. The evolutionary advantages of such procedures and capacities for imaginative simulation are thought to consist in achieving social and practical ends to which such procedures and capacities can be put to use. What is happening when we episodically remember is just our reenacting the activation of the relevant sensorimotor contingencies or sense-making activities, where doing so is sufficient to engage imaginative simulations of corresponding past perceptual experiences of the relevant events.

As we’ll elaborate, we think that causalism gets right that some appropriate causal link must obtain between a past perceptual experience and a corresponding present representation for the latter to count as a memory. Positing such a link goes some way towards accounting for how episodic memory is different from both perception and non-mnemic experiential imagining. And it goes some way towards explaining how it is that one has first-hand knowledge of events in their own past by virtue of having experienced those events themselves. And, as we’ll elaborate, we think that simulationism gets right that episodic remembering is one

dimension of a multidimensional capacity<sup>1</sup> whose manifestations can include episodic thought of the present and future as well. Acknowledging the continuity of memory and other forms of episodic thought goes some way towards accounting for how episodic memory is similar to non-mnemic experiential imagining. And it goes some way towards accounting for the experiential content of the first-hand knowledge of events we gain through such memory. Showing how episodic memory is similar to but differs from perception and non-mnemic imagination constitutes a desideratum on accounts of memory, as does showing how such memory provides us its unique kind of first-hand knowledge of events from our personal past.<sup>2</sup> In fact, we will argue that these desiderata are not independent of each other and, so, require a unified way of satisfying them. Finally, as we'll elaborate, we think enactivism gets right that episodic remembering is fundamentally a kind of *re-enactment* that draws on perceptual and sense-making capacities and involves imaginative activity.

Yet, for causalists, simulationists, and enactivists, a tension arises between attempting to satisfy both desiderata. This tension itself comes from an additional underlying problem that these accounts inherit from philosophy of perception, since mnemic content is in some way derived from perceptual content.<sup>3</sup> The underlying problem is that of giving an account of perceptual content that is thin enough that we can say we share perception with nonhuman animals but thick enough to do the epistemic heavy lifting that it does in us. As we'll argue in the following sections, this problem gives rise to the aforementioned tension, namely, between, on the one hand, showing how memory is similar to but different from perception and non-mnemic imagination and, on the other, showing how it provides us first-hand knowledge of the past. In short, because neither causalists, simulationists, nor enactivists have addressed the underlying problem but, rather, have overlooked it, their accounts either make mnemic content so thin that it cannot provide historical first-hand

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<sup>1</sup> We follow Schellenberg (2018) in understanding mental capacities as powers or potentialities of subjects for representing. The action-forward framework discussed in §3 provides a thorough account of such capacities (see, especially, Springle 2022; Springle & Humphries 2021).

<sup>2</sup> It is worth noting that holding both that the obtaining of an appropriate causal link distinguishes episodic memory and that episodic memory is one dimension of a multidimensional capacity whose manifestations include episodic thought more generally suggests that we do not take the issue of the metaphysical (or epistemological) continuity or lack thereof between episodic memory and experiential imagining to depend wholly on the necessity of said causal link. Thus, we differ from those in the (dis)continuum debate who characterize the issue of continuity as depending on accepting or denying the necessity of such a link. Thanks to an anonymous reviewer for pointing this out.

<sup>3</sup> For causalists, such derivation can consist in direct preservation and transmission of content from perception to memory. Or it might consist in encoding of content into a memory trace or multiple memory traces and reassembling of content through activation of that trace or those traces at recall and/or through imaginative reconstruction working on “props” (Martin and Deutscher 1966; Langland-Hassan 2022a,b). Or it might consist in encoding of contentless memory traces and re-production of content at recall, e.g., through predictive processing (Werning 2020) or reactivation of sensorimotor contingencies (Perrin 2021; his “procedural causalism” is a hybrid causalist-enactivist view). These latter views accept preservation of mnemic content from perceptual content while denying transmission. Finally, derivation for causalism might consist in reinstating the perceptual relation to the event in which one stood when initially experiencing it via the relevant neurophysiological mechanisms (Debus 2010). For simulationists, such derivation is much less direct. Arguably, the materials out of which the episodic construction system produces representations stem at least for the most part from perceptual experience. All temporal and modal dimensions of the system’s activity implicate some previous perceptual experience; episodic memory is not special in that respect. This fact about simulationism is immaterial to our argument. The tension will arise so long as simulationists attempt to hold onto the claim that at least successful remembering has epistemic import and hold that episodic mental representations represent by standing in for what they represent. Finally, for enactivists, such derivation can consist in the formation of sensorimotor contingencies or capacities for sense-making concerning the relevant event, their retention, and their reactivation at recall. Thanks to an anonymous reviewer for pushing us to clarify this point.

knowledge or make it so thick that the accounts in question threaten to lose sight of what we do (and what we do not) share with nonhuman animals.

By contrast, the account we introduce is built on an account of perception that was developed to solve the underlying problem, the “action forward framework for intentionality” (Springle & Humphries 2021; Springle 2022, forthcoming; Springle & Buccella 2024). This framework solves the underlying problem in philosophy of perception by claiming that perceptual representations in both humans and nonhuman animals are the activation of capacities for action. In this respect, the framework and resulting account of episodic memory are similar to enactivism. Yet, unlike enactivism, the framework and account posit internal mental representations. According to the framework, activation of capacities for action provides the agent *direct* practical access to the targets of those actions, where those targets just are the objects of the corresponding mental representations. Mental representation and action are thus two sides of the same coin. The action-forward framework is representationalist but rejects and replaces the standard conception of the form of mental representations that is popular among representationalists *and* anti-representationalists in contemporary philosophy of mind. The standard conception models such representations on propositions, maps, or pictures and holds that they *stand in for* their objects by virtue of bearing appropriate mapping relations to those objects. The action-forward framework relocates propositional, map-like, and pictorial forms of representation back in their original homes in social-linguistic practices. These representations bear the relevant mapping relations to their objects and, thus, stand in for those objects by virtue of providing the agent *indirect* practical access to them. That is, objects that aren’t directly practically accessed are made accessible to the agent through her use of these stand-in representations. She learns to make use of these representations through inculcation into the relevant social-linguistic practices. This is what allows perception to do the epistemic work that it does in us: our perception is conceptual because, *merely* by perceiving, we are prepared to represent in sentences, maps, pictures, and so on what it is we perceive. nonhuman animal perception, by contrast, does not involve activation of such sociolinguistic capacities.

Our aim in this paper is to make plausible the idea that, paradigmatically, episodic remembering consists in an at least partly covert, self-directed performance of a fundamentally intersubjective kind of action that gives us indirect access to particular events and their particular constituents, most of which no longer exist. We call this kind of action “historytelling.” According to our “historytelling account,” Proust’s episodic memory of Aunt Léonie and their time together in Combray is a *covert*, self-directed version of what Mia does partly *overtly* in describing to Imani moments of the latter’s third birthday. What remains covert for Mia is broadly akin to what actually playing the VHS would’ve made overt. Of course, Mia doesn’t *really* have anything like a movie “playing” in her head. That’s just a metaphor. When we actually watch a home movie, we perceive representations that stand in for recorded events. But our heads contain neither inner eyes, nor inner films, nor inner projectors. When we episodically remember, we don’t literally (*re*)perceive any representations. Rather, we reenact earlier covert acts of *producing* representations that stand in for the particular events and things that we were witnessing. The reenactment and its impact on our recognitional capacities, we’ll argue, is what accounts for the similarity between episodic memory, perception, and non-mnemic imagination. On the other hand, how the capacity to perform such reenactments is acquired is what accounts for the intentionality of such memory and, as such, its ability to provide us first-hand knowledge of events in the personal past. The historytelling account extends the action-forward framework by arguing that one such use is grounded in the social-linguistic practice of producing and reenacting the production of stand-in representations for particular events in the personal past. That is, on the historytelling account, episodic remembering is an expression of the social-linguistic practice of historytelling.

The paper proceeds as follows: §2 sets out two interdependent desiderata on accounts of episodic memory. §3 provides the fundamentals of the action-forward framework for intentionality. §4 applies material

from §3 to sketch the historytelling account, including the constitutive conditions involved in the reenactment that accounts for the experiential quality and intentionality of episodic memory. §5 shows how the account satisfies the desiderata set out in §2. We conclude by returning to how our account differs from causalism, simulationism, and enactivism while retaining what we take to be their insights.

## §2 Desiderata on Accounts of Episodic Memory

Let's return to the scene of Imani and her mother, Mia, in the attic:

### IMANI'S THIRD BIRTHDAY, CONTINUED:

"We had the party at the Community Rec Center—the one a couple blocks down the street. You loved the playground there, y'know. You'd spend hours sliding on that big blue slide. It was your favorite! We got you unicorn cake-pops; you kept poking your Aunt Reana in the face with them. It was hilarious!"  
"Of course, you tried to put every gift you got in your mouth. But...Oh! You *loved* that cat piano your Uncle Percy got you. You insisted on playing it whenever your father tried to say anything. It drove him up a wall! And what else? Ah, yes! I remember when we all huddled around you to take a picture and your grandmother kept finding doodads to rearrange on the table just as the picture was being taken. Your grandfather nearly had a connoption!..." Mia tries to say more, but finds herself laughing too hard to go on.

While Imani cannot herself recall any of this, her mother's descriptions spark her imagination. Imani still walks by the Rec Center often, which she now imagines must have looked larger than life when she was a baby. She has also seen photos of herself and her parents from around the time of her third birthday. So, as Mia joyously shares her memories of that day, Imani can't help but smile as she imagines her mother laughing—just as she's laughing now—at herself as a baby constantly interrupting her father with musical "meows".

Mia is episodically remembering Imani's birthday while Imani is imaginistically imagining what her birthday was or must've been like. Mia's remembering consists in part in verbally producing representations of particular past events largely as she experienced them and as having taken place in her personal past. This is how she understands what she's doing, and this is what Imani understands her to be doing. The contents of Mia's descriptions are "temporally stamped": they are *as of* particular events and their particular constituents largely as those events took place and largely as those things were at some point in the past. Imani, in turn, takes herself to be imagining the very same events, including the relevant individuals and particulars largely as they were at that time. Imani's imagining is a self-conscious activity: if you asked her what she was doing, she'd tell you: "I'm imagining my dad's face when I insisted on playing the cat keyboard." A complete answer would employ verbal representations with the same referents as Mia's. This is why we can say that Imani is learning something from Mia: she's learning the facts of the event of her third birthday—who was there, what they did and ate, and so on. Accordingly, what distinguishes Mia's remembering from Imani's imagining is not *what contents* they remember or imagine respectively, but, rather, *the way that these activities make those contents available*.<sup>4</sup>

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<sup>4</sup> This isn't to say that there are no representational differences between Mia's remembering and Imani's imagining or that the relevant contents are or must be qualitatively identical from Mia's and Imani's point of view (for an argument that memory and imagination differ in their mode of presentation, see Rowlands 2017). Rather, we're just saying that Mia's remembering and Imani's imagining share their referents and that the relevant episodic contents might overlap a great deal.

Imani is acquiring knowledge from Mia's recollections because Mia's descriptions are expressions of knowledge.<sup>5</sup> But where Imani's knowledge of particular events of her third birthday party is *second-hand*, Mia's knowledge of those events is *first-hand*. Imani's capacity to learn from her mother draws on her capacities for learning from testimony. But Mia isn't merely recalling facts she knows any more than Imani, in coming to know them, is merely learning what they are. After all, the contents of Mia's memory and Imani's imagining are *experiential*, that is, at least quasi-perceptual in nature. Imani can, by means of their common particular and generic referents, associate her mother's descriptions with photos of her family from around the same time, with funny home videos she's watched where babies smash the keys on toy pianos to their parents' delight or dismay, and with her own memories of passing by the Rec Center. Imani not only draws on her previous perceptions of buildings and photos of people's faces and imaginatively combines them to produce what she might describe as an "inner experience" of seeing her thirty-something-year-old father's pained face as she smashed the keys of the cat piano. So, the way Mia's remembering manifests her first-hand knowledge of a particular event shares something with the way Imani's imagining deploys her second-hand knowledge of that same event: while neither episodic memory nor imagistic imagining are themselves perceptual capacities, their exercise has salient features in common with perceptual experiences. And this is no accident. If Mia merely wanted to impart to Imani the sheer facts about her third birthday, she wouldn't have bothered using such descriptive language. Mia's descriptions were, recall, prompted by her inability to show Imani the VHS of her third birthday: the point was to give Imani not just second-hand *knowledge* of the event, but a second-hand *experience* of it.

An account of episodic memory should illuminate the relationships just observed between Mia's remembering and Imani's imagining, as doing so also illuminates the properties standardly thought to distinguish the former from other species of memory. One of these properties is its *experiential quality*, that is, what episodic remembering has in common with perceiving (and imagistic imagination) with respect to the qualitative nature of their contents (*cf.* Michaelian and Sutton 2017). Since imagistic imagining likewise shares salient features with perceptual experience with respect to the qualitative nature of its content and can interact with episodic memories like Imani's memories of times she's seen the Rec Center, both inside and out, as an adult, satisfying this desideratum should shed light on the relationship between episodic memory, perception, and imagistic imagining. Moreover, as the foregoing discussion suggests, what is shared between perception, imagistic imagining, and episodic memory is not merely that each involves imagery or sensory content. Rather, what is shared, in us, is experiential content that can of itself stand in referential or justificatory relations to things in the world and the contents of other mental representations. The desideratum at issue is about explicating this while at the same time accounting for the differences in such content between perception, imagistic imagination, and episodic memory. Call this **the experiential quality desideratum**.

We take it that a difference between episodic memory and imagination is that the latter, like all varieties of declarative memory, functions to provide first-hand knowledge of the past. Memories seem to be epistemically united as a class by having historical epistemic functions. Imagination can at least sometimes have an epistemic function (Kind & Kung (eds.) 2016; Kind 2018; Kind & Badura (eds.) 2021; Myers 2021, forthcoming), but it's not essential to imagining that it perform such an epistemic function nor are its epistemic functions essentially

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<sup>5</sup> We here diverge from non-epistemic accounts of episodic memory in holding that its paradigmatic exercise is an expression of knowledge (for an argument against non-epistemic accounts, see James 2017). However, the claim that episodic memory is a source or expression of knowledge has historical precedence in philosophy of mind. Moreover, we think that IMANI'S THIRD BIRTHDAY is a paradigmatic example both of episodic remembering and of sharing memories through testimony with those who lack them and, most importantly, we think that the most natural and straightforward explanation of what is going on in this example is that Mia is providing Imani with *memory-based* knowledge or justification for beliefs concerning the goings-on of the latter's third birthday.

historical. And, unlike other kinds of declarative memory, the historical epistemic function of episodic memory specifically targets particular events from the personal past and achieves reference to those events through its experiential quality. The difference here isn't merely phenomenal. It wouldn't disappear if, say, semantic memories of events in the personal past were accompanied by phenomenal episodes—after all, Imani could later recall Mia's description and re-imagine what her third birthday was or must've been like. Her doing so wouldn't be her episodically remembering the event. Likewise, were Mia to forget the episode sometime later and be told about it by Imani, Mia's then imagining it wouldn't be her episodically remembering the event even if her imagery was identical to the content of her previous episodic memories. Following Martin and Deutscher, we take it that accounts of episodic memory should distinguish remembering from relearning. The episodes of episodic memory are tied to the epistemic function of providing *first-hand* knowledge of particular events in the rememberer's personal past that is tied, in turn, to her past experience of those events. Indeed, the availability of such episodes allows one to know that the events one recalls are in fact one's own recollections and not just facts that one can state about one's personal past nor, given the appropriate causal connection, instances of relearning. Accordingly, an account of episodic memory should capture its distinctive historical epistemic function. Call this **the first-hand historical epistemic function desideratum** (epistemic function desideratum for short).<sup>6</sup>

If, as we've suggested with **IMANI'S THIRD BIRTHDAY**, the episodes of episodic memory are tied to its historical epistemic function, then the experiential quality and epistemic function desiderata are connected. Mia's phenomenal episodes are part of her, in a sense, re-experiencing the remembered event, whereas Imani's episodes are just her imagining what her experience was or must've been like. Imani was alive and conscious at her third birthday party, but she probably wasn't then able to encode her experience of the event *so as to recall it later*. Her arguably lacking the capacity for episodic memory and its constituent sub-capacities is what explains why she cannot remember the event despite being able to (re-)imagine it. It seems, then, that while one can have phenomenal episodes of particular events from the personal past without episodically remembering them, it's likely that one cannot have first-hand knowledge of those events without at the time of those events having the capacity to later episodically remember them. At the same time, one cannot episodically remember without having the episodes. We take all this to suggest that its first-hand epistemic function and its experiential quality are unified aspects of the capacity to remember rather than discrete elements. Satisfying the epistemic function and experiential quality desiderata therefore requires illuminating this unity. We believe that, by extending the action-forward framework for intentionality, the historytelling account is positioned to do just that. It's to a brief introduction of the former that we now turn.

### §3 Laying the Groundwork: The Action-Forward Framework

The action-forward framework was originally developed to provide a naturalistic account of perceptual representation that grounds its intentionality in the teleo-developmental structure of intentional action (Springle 2022; Springle & Humphries 2021). According to the framework, intentional actions are teleological, developing processes for solving problems constituted by needs for flourishing, for instance, the need for

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<sup>6</sup> There is a third, related feature of episodic memory worth mentioning: its *episodicity*. We think that what makes episodic memory episodic is in part its experiential quality, that is, what it shares with perception with respect to the qualitative nature of its content. However, others claim that it is, instead, the feeling of pastness as it concerns the contents of episodic memories, auto-noesis, etc. (e.g. Dokic 2014, Perrin 2018, Perrin & Sant'Anna 2022). Due to space, we do not address the issue of episodicity directly. But we think the historytelling account has the materials to capture it as well, including most importantly that in virtue of which are or are experienced by the subject to be about an event in her past. We leave fully unpacking how the account captures these more nuanced aspects of mnemonic self-consciousness for another occasion.

nourishment or the need for edifying aesthetic experiences.<sup>7</sup> Intentional actions, like living organisms, are the sorts of things that develop in characteristic stages.<sup>8</sup> Just as oak trees begin their lives as acorns, so intentional actions begin their lives as potentiated intentional actions or “action acorns.” According to the action-forward framework, these acorns are mental representations.<sup>9</sup> By positing intentional action acorns, the framework conceives of the intentionality of mental representations and the intentionality of the performance of intentional actions as two sides of the same coin or, rather, two stages in the life of an individual action. In the order of existence, neither intentional actions nor mental representations come first. They are not two distinct existences, but, rather, two phases of a single teleological process. We’ll now explain how the framework’s practical access analysis of representation allows us to explain all representation on the model of intentional action acorns.

According to the action-forward account for intentionality, representations constitutively function to provide “practical access” to targets:

**Representation:** R is a representation iff R provides (or is supposed to provide) an agent with practical access.

**Practical Access:** An agent has practical access to a target iff the agent is in a position to respond to the target, where she is so positioned iff she is primed to produce one or more actions that are directed at that target. The agent is primed to produce such actions iff her capacities for producing these actions have been activated so as to potentiate instances of such actions.

In other words, a representation is something that’s supposed to provide practical access to a target by positioning the agent to produce an appropriate action with respect to that target. They succeed if they “practically fit” the situation (including the target) at which they’re directed, that is, if they’re appropriate.

The fundamental normative standard for intentional actions is **appropriateness**. An intentional action is appropriate just in case, were it performed to completion, it would non-accidentally solve an instance of the type of problem it functions to solve. Appropriateness isn’t a matter of actually successful performance. Rather, it’s a matter of the activation of a process of interaction between a subject and a target which the subject generates and which functions to satisfy a need for flourishing. For instance, eating an apple is an interaction generated by a subject that, when successful, satisfies the need for nourishment. Such an instance of eating is appropriate if the agent has that need on that occasion, there is an apple that the agent can eat, and if her engaging in the act of eating it would satisfy the need. Intentional actions such as eating are type-individuated by the problem that they function to solve, as these specify the types of interactions and targets that define the type of solutions that a type of intentional action functions to constitute.<sup>10</sup> So, eating is individuated as a type of action that functions to solve the problem of needing nourishment. The different means by which different

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<sup>7</sup> As the latter need suggests, the framework understands “need” broadly such that it extends beyond needs for mere survival.

<sup>8</sup> For similar views of action, see, for instance, Thompson (2007), Small (2012). For a full defense of the account of action upon which the action-forward account for intentionality is based, see Springle (2021).

<sup>9</sup> More precisely, the framework analyzes representations *qua* concepts as abilities for types of intentional actions (i.e. solutions) and representations *qua* judgements as intentional action acorns. Here we focus on the latter. For a more detailed discussion, see Springle (2022), Springle & Humphreys (2021), Springle and Buccella (2024) Springle (forthcoming).

<sup>10</sup> That said, a single action performance may function to solve more than one problem and thereby constitute two distinct solutions (the two-birds one-stone phenomenon).

agents go about eating constitute more determinate solutions to the same problem and form general **solutions** that are appropriate for producing different targets for eating. Hunting, scavenging, grazing, shopping, going to a restaurant, ordering delivery and so on are sub-solutions constituting distinct mechanisms for non-accidentally satisfying the need for nourishment and together constitute solutions for addressing that need. Solutions, then, are constellations of connected capacities for action that can be partly or fully activated by an appropriate need and target relative to an appropriate environmental context. The facts that are instances of the problem that an action functions to solve (need-facts) together with the facts that are instances of the type(s) of targets involved in solving the relevant type of problem (target-facts) constitute a solution-type's **domain of application**. Appropriateness, then, is a matter of the activation of at least part of a solution relative to a domain of application where the complete application of the solution and its sub-solutions to its domain *would*, on that occasion, result in the satisfaction of the relevant need.<sup>11</sup> And practical access is a matter of the agent's being positioned to produce appropriate actions.

There are two key varieties of practical access: unmediated practical access and mediated practical access. The agent has unmediated practical access to a target just in case she is positioned to produce an intentional action that is a *direct* response to that target, where a response is direct when its immediate target is none other than that target. An agent has mediated practical access to a target just in case the agent is positioned to produce an intentional action that is an *indirect* response to the target, where a response is indirect when its immediate target is something that takes the place of the original target, that is, something the agent acts on directly so as to act on the target indirectly. Corresponding to these two kinds of practical access are two species of representation:

***De agendo* Representation:** R is a *de agendo* representation iff R provides unmediated (direct) practical access.

***De substituto* Representation:** R is a *de substituto* representation iff R provides (or is supposed to provide) mediated (indirect) practical access.

*De agendo* representations are acorns of direct/unmediated actions. Such acorns, or potentiated actions, constitute embodied, non-descriptive modes of presentation of targets.<sup>12</sup>

*De substituto* representations are acorns for indirect/mediated actions. At least paradigmatically, such representations are themselves products of intentional actions that function to solve needs-based problems having to do with limitations to (immediate) practical access. For instance, say a botanist needs to learn to identify some species of orchid that only grows in a remote part of the world she hasn't had the chance to visit. A photo of an orchid of the relevant species can substitute for seeing an actual flower: by studying the photo, the botanist can learn how to identify the orchid species without ever directly encountering it (a written or spoken description could also do this, though perhaps less effectively). Of course, the mere existence of a stand-in won't make it the case that one has mediated practical access to what it stands-in-for. *De substituto* representations can provide mediate practical access to targets only when agents have *de agendo* practical access to their vehicles.

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<sup>11</sup> In nonhuman animals, solutions and sub-solutions compete for full activation in light of the current domain of application and the animal's past experience. By contrast, in human beings, not only do solutions and sub-solutions compete for full activation but, thanks to inculcation into social-linguistic practices, we have solutions for problem-solving. That is, we have learned solutions for intervening on our system of solutions. Our having the ability to shape our own solutions is a fundamental dimension of our self-referential, discursive, epistemic, and, ultimately, mnemonic capacities.

<sup>12</sup> *De agendo* representations have affinities to Ruth Millikan's account of "pushmi-pullyu" representations and hence of what it is to perceive Gibsonian affordances.

Without at least some unmediated practical access, one couldn't intentionally interact with a *de substituto* representational vehicle.<sup>13</sup>

Both *de agendo* and *de substituto* representations have constitutive **appropriateness conditions**. The appropriateness conditions of *de agendo* representations are the same as those of the intentional actions of which they are potentiations. That is, as the appropriateness of an intentional action is the applicability of at least part of a solution constitutive of that action to its domain of application on some occasion, so too is the appropriateness of the intentional action across the applicability of that (part of) the solution. Because they potentiate indirect actions on targets to which the agent has mediated practical access through direct actions on *de substituto* representational vehicles, the appropriateness conditions of these representations envelope their constitutive **veridicality conditions**. In order to gain indirect practical access to the orchids that she is interested in studying, the botanist must capitalize on the mapping relations that the photo bears to those orchids and does so through capitalizing on her direct practical access to the photo, that is, through properly using it as a proxy. The practice of nature photography is in part dedicated to the production of photos that bear these mapping relations to their objects. It's thanks to this practice and the photographer's participation in it in taking the photo that it bears the relevant mapping relations to the relevant orchids such that the botanist enjoys indirect practical access to them through her direct practical access to it. That is, the veridicality conditions on the proper use of the photo by the botanist are partly grounded in the practice of nature photography. The same goes for propositions and map-like representations. All three kinds of representation are kinds of *de substituto* representation.<sup>14</sup>

The action-forward framework for intentionality's practical access analysis of representation has several advantages. First, it's a *unifying* analysis: it grounds mental representations—i.e. *de agendo* representations—and public representations like pictures, sentences, and maps—i.e. *de substituto* representations—in the same generic function of potentiating actions. Second, propositional attitudes can be reconstructed in the framework in terms of composite *de agendo-de substituto* representations and the discursive activities in which they figure. Human discursive practices employ *de substituto* representations, and humans like our botanist have the capacities to respond to and produce *de substituto* representations in appropriate ways and on appropriate occasions. Human capacities to produce *de substituto* representations yield *de agendo* contents that are

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<sup>13</sup> A single representational vehicle typically constitutes a multiplicity of *de substituto* representations corresponding to all the distinct actions it potentiates (where the relevant actions may be of different types). What we call representations are often things that function to be potentials for types of action rather than themselves being potentiations of particular actions (Springle refers to these as “concepts,” while representations are applications of concepts).

<sup>14</sup> It's important not to confuse *de agendo* representations with either directives or imperatives. According to the action-forward framework, both directives and imperatives are *de substituto* representations that represent by standing-in-for things, namely, actions and situations. They have constitutive veridicality conditions, only understood as an aspect of their appropriateness conditions. The different ways *de agendo* and *de substituto* representations are about the things they represent is reflected in their success conditions. Since *de agendo* representations don't represent by standing-in or going proxy for anything but, rather, by being potentiations of actions that are themselves intentionally directed at targets, they have constitutive appropriateness conditions but not constitutive veridicality conditions. By contrast, directives and imperatives have constitutive veridicality conditions. This is because the appropriateness of the indirect action that they potentiate depends on how they stand-in-for a target and on whether they do so “faithfully” or “truly” in the ways required for the indirect action to non-accidentally achieve its end. An order or request represents the action ordered or requested as to-be-done, and they are successful if what they represent as to-be-done is faithful or true to what, in fact, is to be done. Directive and imperative contents, then, are just *de substituto* representations that are parts of acts of (trying to) get someone to make it the case that either the world and the *de substituto* content match—say, if the representation is a picture or image—or make it the case that the world satisfies the content—say, if the representation is a descriptive sentence.

composite: they “embed” the *de substituto* representations they are potentiated actions for producing. For instance, the photographer’s snapping a picture of an orchid involves his having an embedding *de agendo* representation for producing a photo that accurately captures the flower’s features and the photo-to-be-produced is embedded in his potentiated action for snapping that picture. And our botanist’s potentiated use of the photo is likewise an embedding *de agendo* representation that embeds the photo’s *de substituto* content, namely, those identifying features of the orchid captured by it and by which she might later come to recognize similar orchids in the wild.

A third advantage of the action-forward framework brings us back to its original purpose, namely, providing a naturalistic account of perceptual representation the intentionality of which is grounded in the teleo-developmental structure of intentional action. In particular, the framework aims to make sense of two seemingly conflicting facts about perceptual representation: both humans and nonhuman animals perceive, yet, human perception is unlike nonhuman animal perception in that it provides us objective knowledge of particulars in our perceptible surroundings. Now, many philosophers assume that the fact that perception is a capacity we share with nonhuman animals means that, since animals seem to lack conceptual capacities, perception in us must be nonconceptual. But this creates trouble for accounting for perception’s epistemic role (McDowell 1996, 2008). That is, it’s difficult to see how we could ever be in a position to apply concepts like ORCHID or APPLE correctly in ascribing the corresponding objective properties to their proper objects when some such objects are in our presence if our perception of them didn’t already draw on capacities to apply those concepts. That is, it’s difficult to see how we could ever rightly judge, “that is an apple” on the basis of looking at an apple if our perception is, like that of animals, thoroughly nonconceptual. Maintaining that human perception is nonconceptual creates a gap between perception and conceptual perceptual content. Many philosophers assume that this gap can be easily avoided. After all, perception enters into explanations of broadly intelligent behaviors in animals where it plays a broadly epistemic role of providing a kind of action-guiding awareness of the world. The problem, however, is that unless perception’s epistemic role in nonhuman animals involves conceptual capacities after all, the gap hasn’t been addressed. Those who take overcoming this gap seriously propose a different solution: perception is a psychological genus of which human and nonhuman perception are distinct species (Marcus 2012, 2021; Boyle 2016, 2022).

The third advantage of the action-forward framework is that it provides a way of articulating this genus-species proposal that captures the behavioral expressions of perceptual awareness of nonhuman animals without attributing superfluous capacities to them and that allows that perceptual states in humans are propositional attitudes with composite elements. Animal perceptual contents are *de agendo* contents through and through. Their broadly intelligent behaviors are a function of the appropriateness of those *de agendo* contents. But they don’t have nor can acquire conceptual capacities and, so, aren’t in the business of categorizing or otherwise cognizing the objective features of particulars in their perceptible environment. Human perceptual contents are, on the other hand, *de agendo* contents that embed *de substituto* contents. The *de substituto* components render human perception conceptual so that such perception can play discursive roles like, say, justifying beliefs. We can thus avoid creating a gap between perception and conceptual perceptual content while respecting the fact that both humans and animals perceive. Perception, as a genus, is a capacity for direct (unmediated) practical access. Perceiving is always a matter of a creature *de agendo* representing. But in humans, it isn’t only a matter of *de agendo* representing. For perception in humans is rationally transformed: it incorporates the discursive (*de substituto*) form of practical access. And such transformation is perfectly natural by virtue of being a kind of *second* nature. That is, we come to have embedding *de agendo* contents in perception

thanks to our inculcation into a variety of social-linguistic practices and thanks to our having needs which call on and solutions that make use of *de substituto* representations.<sup>15</sup>

So much for the action-forward framework for intentionality. We now turn to extending the framework to provide a plausible account for episodic memory.

#### §4 The Historytelling Account of Episodic Memory

With the core components of the action-forward framework in place, we're ready to explicate the historytelling account proper. We give an overview of the capacity as it exists in a fully developed mnemonic agent like Mia. Along the way, we outline what we take to be the conditions for its constitution as well as for its manifestation in overt, paradigmatically interpersonal performances. In doing so, we consider how the capacity manifests partly covertly in interpersonal acts of joint recollection as well as in acts of sharing memories as Mia does with Imani. We likewise consider how it manifests fully covertly in intrapersonal acts of remembering. We attempt to show how such a capacity gives rise to episodic memory's characteristic temporally framed representation and phenomenal, that is, experiential quality. We likewise attempt to show how episodic memory provides us first-hand knowledge of the personal past. Finally, we take it that the capacity for historytelling is complex in virtue of being an integrated and unified whole composed of several sub-capacities. Altogether, then, this section sets us up to show, in §5, how the historytelling account satisfies both of the desiderata on accounts of episodic memory.

##### §4.1 The Capacity for Historytelling: An Overview

The historytelling account identifies the capacity for episodic memory with the capacity for historytelling. We take it that this capacity functions to address needs for building relational ties, planning future action, and developing a coherent sense of self over time through sharing experiences. The account holds that the historytelling capacity, in turn, is a rational capacity comprising (1) discursive, (2) expressive, and (3) perceptual-recognitional sub-capacities. The discursive sub-capacities facilitate the creation and use of systems of discursive symbols. Following the action-forward framework, they are what allows us to represent ourselves and, thus, to be self-conscious in our action and, subsequently, in thought. The expressive sub-capacities comprise yet further capacities for performance, artmaking, and so on. They're what allow us to, *inter alia*, construct *de substituto* representations such as maps, pictures, films, paintings, performances, sculptures, music, and even symbolic gestures. The perceptual-recognitional sub-capacities are those for (re-)identifying particular objects and instantiations of properties in perception, imagination, and—when activated as part of historytelling—memory. They're what allow us to identify and re-identify specific happenings as well as the types to which they belong, types of action and their instances, particular people, places, things, properties, and

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<sup>15</sup> One might worry that the account founders on this front by failing to articulate the sub-individual mechanisms whose activity is supposed to realize perceiving. The worry would then extend to the historytelling account, as it, too, does not lay out the sub-individual mechanisms whose activity is supposed to realize episodic remembering. In response, both the action-forward framework and the historytelling account are non-reductive. As such, both are committed to the claim that identifying such mechanisms are not helpful in explicating the nature of either perception or episodic memory. This puts us at odds with most contemporary, empirically-informed accounts of both mental phenomena. Yet, we do not think that this poses a problem for making sense of empirical findings or philosophers' use thereof. Rather, we think that the work done by philosophers of perception and memory and the psychologists, cognitive scientists, and neuroscientists is valuable by illuminating the (potential) underlying causal structure without providing insights into the metaphysical nature of either perception or memory. Due to considerations of space, we leave spelling out what this means for the historytelling account for another occasion. Thanks to an anonymous reviewer for pushing us to clarify this point.

so on. They're also what gives rise to the sensory- or experiential-phenomenology characteristic of perception, imagistic imagining, and episodic memory. All three types of capacity can function independently of episodic memory. However, we'll be focusing on them in their function as sub-capacities or, more properly, unified dimensions of historytelling.

According to the account, in a subject in full possession of the historytelling capacity, all three sub-capacities are active at encoding and at recall. At encoding, these capacities are activated as part of transformed human perception and as part of the general capacity for historytelling. They function as procedures for making the relevant event, largely as one experiences it, part of one's history by placing it within a temporal frame of reference relative to one's life. A memory is formed when the activation of these sub-capacities leads to the formation of a distinct set of discursive, expressive, and perceptual-recognitional sub-capacities for reenacting the subject's experience of the relevant event. Consolidation—the process by which a newly formed memory is made into a long-term memory—then, is a matter of the formation and stabilization of these latter sub-capacities into a capacity for historytelling specific to that event. At recall, this capacity for telling the history of the relevant event is activated, where, in cases of overt historytelling, the corresponding reenactment is one of reconstructing a record of the event in, say, speech, as Mia does in telling Imani of the events of the Imani's third birthday. Yet, Mia's having the standing capacity to reconstruct such records does not mean that any record is retained between encoding and recall. Rather, what's retained is the standing historytelling capacity that is tied to the event. And, were Mia to reminisce about Imani's third birthday covertly, the activation of this standing capacity would not result in the reconstruction of an actual record. Rather, her covert reminiscing would only potentiate an act of reconstruction, bypassing construction of any actual *de substituto* representation and endogenously activating the relevant perceptual-recognitional capacities for the event and its constituents by providing these latter capacities *anticipatory* inputs.

Let's drill down on each sub-capacity. Starting with the discursive sub-capacity, at encoding, it functions to provide the temporal frame of reference. It's an embedding *de agendo* concept for constructing an initial recording of the event through description and can be more or less self-consciously performed. Had Mia dictated the goings-on of Imani's third birthday during the event, her doing so would be an extended, overt manifestation of this sub-capacity. That is, what Mia does in dictating the event in real time is something she could do covertly just by perceptually experiencing the event. Her dictating extends the transformed perceptual dimension of her historytelling capacity by recording a significant moment in her and her daughter's life together. Focusing on non-extended exercises of the discursive sub-capacity, Mia might watch baby Imani poking her Aunt's face with a cake-pop and form an intention to "make a mental note" in response. After all, it's too cute and funny a moment not to share. Mia might then deliberately focus on recording the moment by narrating it "in thought." On the historytelling account, her doing this just is her activating the relevant embedding *de agendo* concept(s) for recording the event. Yet, even if she hadn't intended to "make a mental note," Mia likely would still have enacted recording the event through activation of the relevant discursive sub-capacity, albeit arguably inattentively. Whether overt (and extended) or covert, other things being equal, the result of the act of recording is the acquisition of a further discursive ability specific to the event, namely, one for (re)telling oneself or others about it. Assuming this new discursive sub-capacity comes to be properly related to corresponding expressive and perceptual-recognitional sub-capacities by mutually reinforcing connections of activation, at recall, it functions as a procedure for (re)tellings of that moment largely as one experienced it. This new discursive capacity is a distinct embedding *de agendo* concept for (re)constructing the record of the event made at encoding. Its activation is an integral part of Mia's telling Imani about the birthday: she reenacts her initial recording.

A general discursive capacity for the construction and use of *de substituto* representations of objective time is thus one constitutive condition on the possession of the capacity of historytelling. This capacity is

activated in transformed human perception, potentiating acts of expressing in judgment, speech, and so on an event's occurring *now*, of its being experienced by the agent *now*, of those of its constituents that the agent is experiencing as being present or being instantiated *now*, and so on. This capacity is activated as a sub-capacity of the general capacity for historytelling whenever two further conditions are met. First, activation of the general discursive capacity must lead to the formation of a corresponding discursive sub-capacity for constructing or using *de substituto* representations of an event's occurring *then* (or, say, *last Tuesday*), of its having been experienced by the agent *then*, of those of its constituents that the agent experienced as having been present or having been instantiated *then*, and so on. The formation of the new discursive sub-capacity can constitute *part of* an instance of intentional encoding, a foreseen consequence of experiencing the event, or an incidental or even unwanted consequence of such an experience (McLaughlin 1965; Zhou et al. 2012; Ferr et al. 2015). Second, the newly formed discursive sub-capacity must form mutually reinforcing connections of activation with corresponding expressive and perceptual-recognitional sub-capacities tied to the event. According to the historytelling account, the formation and stabilization of these connections constitutes the consolidation of the memory. The complex thus formed and stabilized forms part of a solution for sharing experiences.

Turning to expressive sub-capacities, at encoding, they function together with discursive sub-capacities to make recordings of events. Indeed, there can be significant overlap in the activity of discursive sub-capacities and that of the expressive sub-capacities. This overlap is born out in the fact that the subject can reason with or about the performances, pictures, and so on that she makes in overt performances of expressive recording and (re)tellings. The overlap is also born out in the fact that she can place the objects of those performances, pictures, and so on within the temporal frame of reference of her life and can share such temporarily stamped contents, as Mia does with Imani. If Mia intended to "take a mental picture" rather than "making a mental note" she would be activating an embedding *de agendo* concept that brings to bear her capacities for taking videos or pictures, drawing, performance, or other acts of forming or using *de substituto* representations onto the formation of the corresponding capacity for later (re)tellings of the event. Other things being equal, the result of such expressive recording is the acquisition of a further expressive sub-capacity specific to the event, namely, one for (re)depicting the event largely as she experienced it "in picture" (or song, dance, and so on) as, again, happening *then* (or, say, *last Tuesday*). Assuming this new expressive sub-capacity comes to be properly related to corresponding discursive and perceptual-recognitional sub-capacities through consolidation, at recall, it functions as a procedure for (re)performing the act of displaying, drawing, performing, etc. the event largely as one experienced it in the past for oneself or others. This new sub-capacity is a distinct embedding *de agendo* concept for performative expression as part of (re)constructing the record of the event made at encoding. Its activation is also an integral part of Mia's telling Imani about her third birthday, say, in attempting to mimic Imani's grandmother's finding doodads on the table to rearrange as the camera shutter went off.

A general expressive capacity for the construction and use of expressive *de substituto* representations of events largely as they are experienced is thus another constitutive condition on the possession of the capacity for historytelling. This capacity *can* be activated in transformed human perception by potentiating acts of relaying a currently experienced scene or event largely as it's experienced through the construction and use of *de substituto* representations whose vehicles include song, dance, painting, photography, and so on. It likewise *can* be activated in imagistic imagining by potentiating acts of representing counterfactual or fictional things or events through the construction and use of such *de substituto* representations. This capacity is activated as a sub-capacity of the general capacity for historytelling whenever two further conditions are met. First, such activation must lead to the formation of a corresponding expressive sub-capacity for constructing or using expressive *de substituto* representations of an event largely as it *was* experienced. Like the formation of the discursive sub-capacity for temporally stamping the event, this formation can be part of different kinds of encoding. Second, this new expressive sub-capacity must form mutually reinforcing connections of activation

with corresponding discursive and perceptual-recognitional sub-capacities tied to the event as part of consolidation.

Importantly, mnemonic agents needn't possess a skill for singing, dancing, drawing, painting, film production, and so on to activate corresponding expressive sub-capacities in encoding an experience of an event or in recalling the corresponding memory. Indeed, so long as Mia's acts of encoding and recollection are covert, she only needs to be familiar enough with how one might go about initiating a bit of singing, dancing, drawing, painting, filming, and so on so as to endogenously activate the target perceptual-recognitional sub-capacities through anticipatory inputs. Because, on the historytelling account, no actual *de substituto* representation is constructed in covert exercises of the historytelling capacity, the remembering subject can activate the relevant perceptual-recognitional sub-capacities without knowing how to actually draw, paint, film, etc. what she would like to remember. Moreover, in overt historytelling, the agent need only know how to draw, paint, etc. well enough to make a corresponding *de substituto* representation. She needn't be able to create highly accurate depictions nor great art.

This brings us to the perceptual-recognitional sub-capacities. At encoding, the activation of these sub-capacities serves to provide the discursive sub-capacity with its perception-based referents. These sub-capacities are activated at encoding by inputs ultimately stemming from the environment but, like expressive sub-capacities, draw on discursive sub-capacities constituting the concepts applied in, for instance, perceptual judgments. This overlap in activity is similarly born out in the fact that the subject can both reason with and about the event and its perceptually mediated constituents in real time. Likewise, this overlap is born out in the fact that the subject can place the event so perceived and its constituents within the temporal frame of reference of her life at encoding and can share such temporally stamped content. In experiencing Imani's third birthday party first-hand, Mia recognizes Imani, her father, her grandmother, Uncle Percy, Aunt Reana, the cake-pops, the cat keyboard, and so on as what they in fact are and in real time. She can reason about them as people and things she is perceiving *now* and the significance they have for the event and for her life at that very moment. Other things being equal, the result of such perceptual recognition is the acquisition of a set of further perceptual-recognitional capacities specific to the event, namely, those for perceptually re-identifying the event and its constituents. Assuming this new set of perceptual-recognitional capacities comes to be properly related to corresponding discursive and expressive sub-capacities through consolidation, at recall, it functions as a procedure for perceptually re-identifying the event and its constituents largely as one experienced them. This new sub-capacity is a distinct *de agendo* concept for perceptually re-identifying the particular happenings, actions, objects, and properties that one was in perceptual contact with at encoding. In overt exercises of the historytelling capacity, such re-identification grants the mnemonic agent indirect practical access to those happenings, actions, objects, and properties through use of a *de substituto* representation constructed, in turn, through the activation of corresponding discursive and expressive sub-capacities. In covert exercises, such re-identification grants her indirect practical access through anticipatory inputs that are endogenously generated directly by the potentiation of acts of constructing such representations, bypassing their actual construction or use.

Possession of a sufficient number of perceptual-recognitional capacities is thus a third constitutive condition on the possession of the capacity for historytelling. Such capacities are activated in transformed human perception together with corresponding discursive or expressive capacities, potentiating acts of identifying in judgment, speech, song, etc. objects, properties, actions, happenings, and so on to which she has direct practical access. Likewise, such capacities are activated in imagistic imagining together with discursive or expressive capacities, potentiating similar acts for perceptually recognizing types of objects, properties, happenings and so on that may or may not exist. This set of capacities is activated as a sub-capacity of the general capacity for historytelling whenever the following condition is met. Namely, the relevant set of

perceptual-recognitional capacities must form mutually reinforcing connections of activation with corresponding discursive and expressive sub-capacities tied to the event as part of consolidation.

Altogether, then, the historytelling capacity comprises three types of sub-capacity: discursive, expressive, and perceptual-recognitional. In particular, the general capacity for historytelling comprises a discursive sub-capacity for temporally stamping events, an expressive sub-capacity for constructing expressive *de substituto* representations of events largely as experienced, and a battery of perceptual-recognitional capacities for identifying happenings and their constituents. That general capacity is given determinate shape through the formation of more particular capacities for telling the history of particular events in the personal past. These particular capacities are in turn constituted by discursive sub-capacities for temporally stamping past events as happening *then* (or *last Tuesday*), expressive sub-capacities for constructing expressive *de substituto* representations of those events largely as they were experienced, and the battery of perceptual-recognitional capacities for (re-)identifying happenings and their constituents. The formation of a memory at encoding consists in the formation of such complex particular capacities for historytelling. Consolidation of that memory consists in the establishment of mutually reinforcing connections of activation between such capacities' constituent sub-capacities, stabilizing those capacities and unifying them both into a specific capacity for telling the history of the relevant event and, thereby, a part of the general capacity for historytelling, giving it a more determinate shape. Finally, it's important to stress that, on the historytelling account, what's retained between encoding and recall is *not* the recording that one reenacts. Rather, what's retained is the capacity for telling the history of the relevant event that is formed at encoding and stabilized through consolidation. That is, what is retained on the historytelling account is a complex capacity for reenacting the recording of the relevant event or, what amounts to the same thing, the part of the relevant solution that functions to solve the problem of social cohesion, future planning, or developing one's self-narrative through sharing one's experience of that event.

#### *§4.2 The Social-Linguistic Practices of Historytelling*

According to the historytelling account, the general capacity for historytelling is acquired by mnemonic subjects as a function of being brought into social-linguistic practices of joint acts of recollection, overt historytelling, and covert historytelling (for similar social-interactionist accounts, see Rowlands 1999, 2009; Campbell 2004; Wilson 2005; Tollefson 2006; Coolidge & Wynn 2008; Sutton 2009; Sutton et al. 2010; Sterenly 2010, 2014; Heyes 2018; Mahr et al. 2023; cf. Campbell 1997; Hoerl 2007). That is, each remembering subject is a rememberer because they were trained in and practiced engaging in historytelling. Initially, such training and practice occurred with others who already possessed the capacity as well as other novices and, then occurred, increasingly, on their own and without needing to overtly construct or use actual *de substituto* representations, i.e., covertly. We take it that joint recollection functions to solve the problem of needing to address discrepancies or gaps in shared experiences of an event among those who were present. In cases where the audience was present to experience the relevant event, historytelling allows repeated indirect intersubjective access to events with a view to the formation of a shared history. Acts of joint recollection are thus subject to correction or elaboration by others. In its overt form, historytelling functions to solve the problem of needing to share experiences with another who may not have been present to experience the relevant events. In cases where the audience was not present to experience the relevant event, historytelling provides them access to an in principle intersubjectively accessible event *through* the experience of the historyteller. The historyteller's experience is here represented through reenactment as properly hers and not the audience's. The historyteller is an epistemic authority on the event in virtue of her having experienced it. This epistemic authority, in turn, warrants treating

her reenactment as relaying her experience.<sup>16</sup> Unlike joint acts of recollection, one's overt historytelling can only be challenged by appeal to facts with which the history is (in)consistent. The epistemic asymmetries between sharing an experience and joint recollection are no accident. For they suggest a transition from reference to particular events from the *interpersonal* past to reference to particular events from the *personal* past proper. Such reference comes onto the scene with a solution to the problem of needing others to identify with you in light of what you personally experienced.

The shift from overt to covert historytelling comes with a shift in need from that of having others understand you in light of what you've personally experienced to that of improving the efficacy of future action in light of what you've experienced and to that of understanding yourself in light of what you've experienced. We thus contend that self-consciousness is a prerequisite for covert historytelling. Moreover, following the action-forward framework, we take it that self-consciousness requires the ability to construct and use *de substituto* representations that stand in for oneself as an agent who acts for reasons. That is, self-consciousness depends on the presence of self-referring discursive capacities born of corresponding self-referring social-linguistic practices. Only when a subject can become an object-as-agent for herself does she become capable of treating herself as a subject of rational perceptual experience and locus of intentionality. Only then is she capable of treating her own experiences and representations thereof as objects of thought.

Focusing on the internalization of the historytelling capacity, once the agent is able to represent herself and her actions, she can begin to repurpose what were before merely sub-capacities of the overt historytelling capacity. This is because she can represent her own overt performances of representing particular events from her personal past. Her doing so allows her to latch onto its discursive, expressive, and perceptual-recognitional dimensions as such. At which point, she will pick up on affordances for activating the relevant perceptual-recognitional sub-capacities provided by the *de substituto* representations constructed in overt performances of historytelling. If she can provide herself these affordances without having to actually construct a corresponding *de substituto* representation but, instead, by activating those perceptual-recognitional sub-capacities in anticipation of such a representation then she can engage in *covert* historytelling. She does so by potentiating acts of reconstructing the relevant *de substituto* representations in the absence of performing a corresponding reenactment of that recording. She takes her capacities for reconstructing those representations "off-line."

To see how the transition from overt to covert historytelling might occur, let's take our running example back in time. Suppose Mia asks a 4- or 5-year-old Imani what she did at daycare that day. And suppose that Imani decides to depict what happened by drawing it. Finally, suppose that, just as Imani is about to ask her mother for something to draw with, the phone rings and Mia responds by telling Imani, "Oh, honey, sorry! I have to get this. But please do tell me after," before going to the kitchen to grab the phone. With her intention frustrated, Imani might nonetheless have an anticipatory perceptual experience of the events she would have represented in drawing. According to the action-forward framework for intentionality, Imani's intention to draw is the potentiation of the outward performance of drawing and, thereby, is itself the beginning stages of that intentional action. The embedding *de agendo* concept for drawing thus activated in turn activates the embedding *de agendo* concepts for perceptually re-identifying the constituent happenings, actions, people,

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<sup>16</sup> For a similar view of the epistemic authority of rememberers, see Mahr & Csibra (2017). We believe their view is on the right track, although we come to roughly the same conclusion from a radically different metaphysics of mental representation.

objects, and so on of the events she experienced at daycare that day. Except, in this case, she doesn't go on to draw anything. What results might well be her first covert episodic memory.<sup>17</sup>

Now, the foregoing is a just-so how-possibly story. Surely, acquisition of the capacity for covert historytelling isn't so circumstantial or happenstance. Moreover, the story presupposes that Imani already possesses both the capacity for joint recollection and the capacity for overt historytelling. This is because the story is meant to isolate the transition from overt historytelling to covert historytelling. In reality, we think that inculcation into the social-linguistic practices of joint recollection and both overt and covert historytelling likely occurs simultaneously, with parents and caretakers prompting the as yet uninitiated to share their experience of events on some occasions and to recall but not share such experiences on others, say, through memory games or through memory-based inference or prediction (Reese 2002; Alea & Buck 2003; Ornstein et al. 2004; Brubacher et al. 2011 Fivush 2019). It's likely, then, that the transitions from the interpersonal past to the personal past and from overt historytelling to covert historytelling processes occur alongside the processes of acquiring the capacities for joint recollection and historytelling proper. And this is just what we should expect on the action-forward framework given that the capacities for the construction and use of *de substituto* representations in general are part of what make self-reference and, thus, self-consciousness possible.

### §5 Satisfying the Desiderata on Accounts of Episodic Memory

We're now in a position to explain how the historytelling account satisfies the experiential quality and first-hand historical epistemic function desiderata. Starting with the epistemic function desideratum, recall that it says that an account of episodic memory should explain the first-hand-experience-based knowledge of particular events from our personal past that we get through such memory. Importantly, such knowledge entails reference to those events and their constituents. Thus, it's worth clarifying how, according to the historytelling account, an exercise of the historytelling capacity like that of Mia's represents a particular event like Imani's third birthday and, so, refers to that event largely as it was experienced. According to the account, reference in episodic memory is secured by virtue of the contributions made by its discursive dimension and by the embedded discursive parts of its expressive and perceptual-recognitional dimensions.<sup>18</sup> This doesn't mean that discursive sub-capacities refer on their own in episodic memory. That is, we aren't claiming that episodic content floats free from its referents without a corresponding semantic memory. Rather, the activity of the discursive, expressive, and perceptual-recognitional sub-capacities refer to particular events in the agent's personal past thanks to their share in discursivity. In particular, the possibility of explicit, temporally stamped representations of such events depends on corresponding social-linguistic practices. The expressive and perceptual-recognitional elements of Mia's historytelling capacity are infused with discursivity in large part due to her being brought into the relevant historytelling practice. They are transformed by virtue of such infusion, i.e., by becoming embedding *de agendo*

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<sup>17</sup> Once she recognizes the function of prompts like Mia's activating the embedding *de agendo* concepts for constructing corresponding embedded *de substituto* representations, she can provide them to herself, allowing herself to episodically remember as an intentional action. Similarly, Mia's deciding to "take a mental note" or "mental picture" is her providing herself prompts for intentionally encoding the event through activation of the discursive or expressive sub-capacities, respectively, that form part of her general capacity for historytelling. Such selective self-prompting in turn suggests that mnemonic agents can modify the sub-capacities constitutive of the capacity for telling the history of particular events and the connections between them. And the ability for such modification suggests that the historytelling constitutive of episodic remembering is skillful (see Small 2014; Goldwasser 2022).

<sup>18</sup> The account of reference for memory as elaborated in this and the previous section bears some resemblance to Werning and Liefke's (2018) account of reference parasitism. However, we differ from these authors in tracing reference to (contentless) memory traces. Thanks to an anonymous reviewer for pointing out the similarity.

concepts for the construction and use of corresponding *de substituto* representations, including pictorial and map-like representations. Activation of the relevant expressive sub-capacities includes activation of capacities for reasoning with and about her constructive activity. Activation of the relevant perceptual-recognitional sub-capacities includes activation of capacities for reasoning about the happening and its constituents largely as she experienced them. Activation of these dimensions, then, is what explains how Mia is able to refer to that event and its constituents as things that she experienced.

In overt exercises of the capacity for historytelling, these particulars are made accessible through the construction and use of a *de substituto* representation of the event. When an event is recalled overtly, a new record of that event is constructed. In covert exercises, they are made accessible through the potentiation of acts of constructing and using such a representation. When an event is recalled covertly, an act of constructing such a new record is potentiated but no record is actually produced. And, importantly, in activating her historytelling capacity, its discursive elements, whether part of the activation of the discursive or expressive dimensions, represent the temporal frame of reference of Mia's life and Imani's third birthday within the temporal frame relative to the current moment. Activation of these elements, then, is ultimately what explains how Mia is able to refer to that event in her personal past as an event that occurred in that past through episodic memory.

Returning to knowledge, Mia has first-personal objective knowledge as of, for instance, baby Imani sliding down the slide in the playground through episodic memory. She has this memory-based knowledge by virtue of the etiology of the particular capacity for telling the history of Imani's third birthday. That is, assuming her original first-hand perceptual experience of the event was appropriate in the sense propounded by the action-forward framework, what affords her that knowledge in memory is the formation and stabilization of sub-capacities that together allow her to reenact recording the event in light of her initial recording at encoding. The experience and its being so encoded and consolidated, then, are necessary for episodic memory's epistemic function. And this requirement is part of what distinguishes Mia's first-hand-experience-based knowledge from Imani's second-hand-testimony-based knowledge. Whereas Mia, in relaying her experience of baby Imani poking her aunt in the face with a cake pop, is drawing primarily from the capacity for reenacting her recording of the event, the exercise of Imani's imaginative capacities depends both for their content and for their giving Imani knowledge of her poking her aunt in the face with a cake pop on the description that Mia provides.<sup>19</sup> This difference is part of what explains why Imani's imagination plays the role of a justified justifier while Mia's memory plays the role of an epistemic source (Myers 2021).

Similarly, the etiology of the particular capacity for telling the history of an event is what distinguishes episodic memory from relearning. In cases of relearning, the subject first loses such a capacity and, then, through testimony, acquires a new discursive capacity tied to the event of being told. This new capacity then forms mutually reinforcing connections of activation to an expressive capacity tied to the event of being told and to the relevant perceptual-recognitional capacities tied to the original event. Finally, upon activating or manifesting this newly formed and consolidated historytelling capacity, the subject can then imagine what the original event was like. If she fails to recognize that the discursive and expressive dimensions of this capacity are tied to the event of being told, she might mistake her relearning for her episodically remembering. Again, following Martin and Deutscher (1966: 174ff.) and more recent causalists, we hold that it is the presence of an appropriate causal link to the original event that makes the difference here.

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<sup>19</sup> We say that Mia drawing *primarily* from the capacity to reenact because we wish to allow that she draws from a variety of other perceptual and epistemic capacities as well in reenacting her recording of Imani's birthday. Her drawing on these other capacities might well explain instances in which episodic memories provide "generative" justification for events rather than merely preserving justification based on past perception (Lackey 2005, 2007, Michaelian 2011).

Turning to the experiential quality desideratum, recall that it says that an account of episodic memory should explain the salient features that episodic memory has in common with perception as well as the relationship between the capacities involved in such memory and those involved in imagining such that they're both episodic. According to the historytelling account, the perception-like experience of both episodic memory and imagination involves activation of perceptual-recognitional sub-capacities in anticipation of a corresponding stimulus where that stimulus is of necessity absent. And the "imagistic" nature of both episodic memory and imagistic imagining involves activation of expressive sub-capacities as anticipatory inputs to such perceptual-recognitional sub-capacities. Even in cases of overt historytelling or extended imagining, the activation of perceptual-recognitional sub-capacities wrought by the construction and use of the corresponding *de substituto* representations are activations in anticipation of stimuli for which the remembering or imagining agent only has *indirect* practical access. The objects are not literally made present to her in either case, despite their being made accessible to her. The same is true of our botanist: the orchids and their identifying features are made accessible to her through the photo. In learning to identify the species, she acquires perceptual-recognitional capacities that facilitate enriched interactions with the relevant orchids *were she to come into contact with them*. That said, activation of *de agendo* concepts for perceptually identifying and re-identifying happenings, actions, people, places, things, etc. as constituents of some episode is common to episodic memory and imagination. Such activation is what gives subjects sensory- or perception-like experiences as of those constituents. Both Mia and Imani are activating *de agendo* concepts for perceptually (re-)identifying the latter's third birthday party and its constituents. Both have those *de agendo* concepts thanks, ultimately, to prior perceptual contact with things in the world. And this is why both have an experience with a phenomenology they might describe as "like being there."

However, like the epistemic difference between memory and imagination, there is a difference in Mia's and Imani's perception-like experience. Mia might describe her mnemonic experience as "like being there *again*," whereas Imani might describe her imaginative experience as "like being there." And the experiences thus described both differ in their phenomenology from Mia's initial experience of the event, which she might've described at the time simply by reference to the perceptible qualities of things with which she was in perceptual contact. These differences in phenomenology ultimately stem as well from the etiology of the capacity to tell the history of the relevant event. Activation or manifestation of the perceptual-recognitional sub-capacities in an act of reenacting one's recording of the event are tied to that event through the activation or manifestation of the corresponding discursive and expressive sub-capacities. The temporal stamp provided by the discursive and/or expressive sub-capacities allows for recognition of perceptual re-identification as such while the expressive sub-capacity provides the (anticipatory) inputs for such perceptual re-identification. That is, the etiology of the particular capacity for telling the history of Imani's third birthday is what explains why Mia's perception-like experience of it is properly mnemonic.<sup>20</sup> By contrast, because the corresponding discursive and expressive sub-capacities at work in Imani's imagining don't originate in her recording of the event, her perception-like experience of her third birthday is properly imaginative.

At this point, one might worry that the historytelling does not go far enough to satisfy the experiential quality desideratum. Indeed, one might argue that, since the temporal frame of reference in mnemonic content is supposed to stem ultimately from the discursive dimension(s) of the historytelling capacity, it is really discursive or semantic and not experiential or "imagistic" content that explains the difference between Mia's experiencing

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<sup>20</sup> The etiology of Mia's perceptual-recognitional sub-capacity for re-identifying the birthday and its constituents gives rise not just to an experience as of perceiving things that are not currently present to her but, arguably, give rise as well to a "feeling of pastness" or what Tulving (2002) calls "autonoetic consciousness" attaching to the episodic content and its constituents (see also Perrin and Sant'Anna 2022; cf. Andonovski 2023).

her remembering as like “being there *again*” and Imani’s experiencing her imagining as merely “being there.” In response, the worry fails to countenance the importance of transformation in the action-forward framework and historytelling account. According to the account, the expressive and perceptual-recognitional dimensions of the historytelling capacity are transformed as part of the process of acquiring the latter capacity. The result is that these dimensions embed the discursive dimension such that activation or manifestation of the former already activates the latter. More simply, in perceiving, imagining, and remembering, human subjects are already applying discursive concepts, which application just is the tokening of conceptually structured contents appropriate for articulation in language or thought. What distinguishes the expressive and perceptual-recognitional dimensions of historytelling from that of imagistic imagining is that the former’s transformation involves embedding concepts whose application provides a temporal frame of reference to what is represented, where the application of those concepts are appropriate in light of the remembering subject’s having experienced the event and her initially recording it at encoding. The result is that, when a subject remembers, the activation or manifestation of these dimensions of her historytelling capacity is sufficient on its own to apply those concepts. That is, Mia’s activating sub-capacities for expressively representing Imani’s birthday is by itself sufficient to activate perceptual-recognitional sub-capacities for that event as having happened, at the very least, *then* and for *re-identifying* the relevant particulars as *having been* there or as *having been instantiated then*. The activation of the perceptual-recognitional dimension of Mia’s historytelling capacity just is her (quasi-)perceptually recognizing the event as having occurred in her personal past. And this is because the activation of the expressive dimension of that capacity already involves her applying the relevant temporal concept(s). No discursive or semantic representing needs to occur on her part. Her experience of the personal pastness of the event, while stemming ultimately from her possession of the appropriate discursive capacities, does not require her to engage in further acts of representing. By contrast, Imani’s imagining does not involve the application of such concepts. Or, if she were to apply them, such application would be inappropriate due to lacking the relevant causal link and, so, erroneous. She would then be mistaking her imagining for remembering. What distinguishes Mia and Imani, and what distinguishes the historytelling capacity from the capacity to imagistically imagine more generally, then, is that activation of the former brings with it the application of concepts which function to provide the appropriate temporal frame of reference in light of the obtaining of the relevant causal link whereas the latter does not.<sup>21</sup>

The common perceptual element between memory and imagination is what distinguishes both from perception proper. Unlike perception, memory and imagination are necessarily indirect in the manner by which they provide practical access to their objects. That is, neither memory nor imagination function, like perception, to give *direct* practical access to particulars. Focusing on memory, the particular past events remembered no longer exist and their constituents are represented in memory as being largely as they were experienced at the time of encoding. Even if some of those constituents persist into the present, reenacting one’s recording of an event containing them doesn’t function to give one direct practical access to them as they are now. And this means, *inter alia*, that, on the historytelling account, nonhuman animals cannot episodically remember nor imagistically imagine. Unlike with perception, we cannot give a genus-species account of what’s shared between humans and nonhuman animals when it comes to such memory or imagining.

While this might seem a steep cost and while *some* have argued that nonhuman animals can episodically remember (for example, Clayton & Dickinson 1998; McCormack 2001; Aggleton & Pearce 2002; Clayton, Bussey, & Dickinson 2003; Allen & Fortin 2013; Allen et al. 2014; Hoerl & McCormack 2017; van Woerkum 2021; Boyle 2022; *cf.* Nelson 1992; Suddendorf & Corballis 1997; Tulving & Markowitsch 1998; Roberts 2002;

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<sup>21</sup> Of course, imagistic imagining can involve the application of appropriate temporal concepts in, say, imagining counterfactual pasts. Thanks to an anonymous reviewer for pushing us to clarify this point.

Tulving 2002; Templer & Hampton 2013), it's not a given that a naturalistic account of such memory is incompatible with characterizing it such that it is a capacity exclusive to humans. For such an account can allow for the ascription of capacities to nonhuman animals that are or involve sub-capacities of episodic memory or which formed the preconditions for the emergence of such memory in humans. Going this route requires denying that empirical methodologies and findings that appear to attribute episodic memory to nonhuman animals should be taken at face-value. Yet, it leaves room for philosophers of science to clarify the semantics of such apparent attributions. Where it seems obvious that a species of perception can be truly and literally attributed to at least some nonhuman animals, it's less obvious that this is the case with episodic memory. So, the historytelling account can allow that nonhuman animals possess important *precursors* to or some of the constituent sub-capacities of episodic memory.<sup>22</sup> Indeed, nonhuman animals exhibit semi-permanent changes in their agential capacities and in the connections between them as well as in the neurocognitive architecture underpinning them as a result of novel or unique experiences. Such changes to animals' system of solutions alter how those animals deal with their environment and can be tied to specific events, situations, times of day, places, or things. Moreover, some nonhuman animals seem to exhibit expressive symbol use in the form of gestures that are not in any obvious way tied to their meaning (i.e. they are arbitrary) and seem to get adopted in groups by convention, e.g., within troops of chimpanzees (e.g. Cissewski and Luncz 2021). Such expressive activity seems to facilitate communication among members of the relevant group in ways that are *suggestive* of the construction and use of *de substituto* representation. Nonetheless acknowledging all of this doesn't require attributing the possession of mnemonic content to nonhuman animals. After all, on the action-forward framework, animals do not enjoy capacities for the construction or use of *de substituto* representations, that is, discursive and what we've been calling expressive capacities sufficient for the kinds of representational systems of which we are capable. So, if, as the historytelling account has it, episodic memory involves at minimum the potentiation of acts of constructing or using such representations then it's no surprise that nonhuman animals lack such memory. And if it can be shown that such precursors or overlapping sub-capacities are sufficient to account for the referents of episodic memory attributions to nonhuman animals in scientific contexts, then the account will not be rendered non-naturalistic.<sup>23</sup>

The historytelling account, then, satisfies both desiderata on accounts of episodic memory. According to the account, episodic remembering is the agent's reenacting her initial recording of particular events from her personal past largely as she experienced them such that she or another experiences now what she experienced then.

## Conclusion

Having sketched the historytelling account and having shown how it satisfies the experiential quality and first-hand epistemic function desiderata, we hope that it stands as a plausible account of episodic memory. To conclude, we return to how the account brings together what we take to be the insights of causalism,

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<sup>22</sup> We address this issue directly elsewhere (see 2025).

<sup>23</sup> That said, we acknowledge that this upshot of the account is highly contentious. We caution against the ascription of discursive or what we're here calling expressive capacities to nonhuman animals in the absence of sufficient evidence. The thought at this point is not that we know, *a priori*, that nonhuman animals lack them. Rather, it is that, if they really possess the capacity for episodic memory or imagistic imagining, they thereby possess capacities for constructing and using *de substituto* representations, that is, representations sufficient for language, map use, etc. of the sort familiar to human representational systems. We believe these capacities come together. And while this itself is likely a contentious claim, it is distinct from a blanket denial of *the possibility* that nonhuman animals possess them. Thanks to an anonymous reviewer for pushing us to clarify this point.

simulationism, and enactivism.<sup>24</sup> From causalism we draw the insight that an appropriate causal link between the experience of an event at encoding and the representation of that event at recall is necessary for the latter to count as a memory. Following at least some forms of causalism, we take it that this requirement explains memory's role as an epistemic source and distinguishes it from relearning. Yet, our account of what the causal link consists in differs radically from standard causalist accounts. For, on the historytelling account, the causal link does not consist in the preservation of a representation that stands-in for the event from encoding, through consolidation, to recall or in the preservation of a contentful or contentless trace understood in terms of the activities of sub-individual mechanisms.<sup>25</sup> Rather, we contend that it consists in the formation at encoding, stabilization through consolidation, and activation or manifestation at recall of a capacity to tell the history of the relevant event. From simulationism we draw the insights that episodic remembering is constructive in nature and that it functions to build relationships, plan for the future, and construct a coherent self-narrative. Yet, we contend that the constructive aspect of episodic memory consists not (just) in the activity of a sub-individual episodic construction system but in the activation or manifestation of expressive agential sub-capacities tied to the events remembered. Moreover, we contend that memory performs its social cohesive, planning, and self-narrative functions through its role as an epistemic source. Finally, from enactivism we draw the insight that episodic remembering consists primarily in a kind of reenacting. Yet, our account of what reenactment in memory consists in differs radically from standard enactivist accounts. For, on the historytelling account, such reenactment involves mental representation. Indeed, the activation of the relevant discursive and expressive sub-capacities in episodic remembering just is the potentiation of acts of constructing and using *de substituto* representations of the relevant event and, so, is the tokening of embedding *de agendo* representations for such construction and use. And activation of the relevant perceptual-recognitional sub-capacities just is the potentiation of acts of constructing and using *de substituto* representations for re-identifying the event or its constituents. Although the historytelling account shares its core insights with causalism, simulationism, and enactivism, the ways in which the account departs from them in how it cashes these insights out means it cannot be easily reduced to any one of them nor to hybrid versions thereof.

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<sup>24</sup> We say “what we take to be their insights” because we acknowledge that the proponents of these views might identify different features of their accounts as providing insights into episodic memory. For instance, enactivists might think that the core insight of their account is that memory is not representational, while causalists and simulationists might think that the core insights of their account is that memory is reducible to sub-individual mechanisms or systems, respectively, whose activity is supposed to generate mnemonic content. We do not think that these are the relevant insights.

<sup>25</sup> We are thus arguably more closely aligned with Perrin (2021) than with other causalists. Yet, he too takes mnemonic content to consist in internal stand-in representations constructed procedurally from reactivation of the relevant sensorimotor contingencies. And while we therefore may seem thus most closely aligned with enactivists, they deny the reality of mental representations. It is the shared assumption of all parties that *if* there are such things as mental representations then they must have the features constitutive of stand-ins that we reject. The historytelling account is closest in logical space to a hybrid account that combines the role of sense-making from enactivism, appropriate causation from causalism, and the claim that there is a unified *capacity* for episodic thought from simulationism. It would still differ from such an account with respect to its underlying metaphysics of intentionality. Thanks to anonymous reviewer for pushing us to further nuance the discussion of causalism and to more clearly locate the historytelling account in logical space.

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