Episodic Memory as a Mindshaped Capacity

Christopher Jude McCarroll and Nikola Andonovski[1]

Abstract:
This chapter examines the hypothesis that episodic memory is a mindshaped capacity. Presenting evidence from cognitive, developmental, and cross-cultural psychology, we argue that episodic memory is mindshaped for the purposes of interpersonal and social coordination. We examine how cultural influences, parental reminiscing styles, and the constructive nature of memory contribute to such mindshaping, promoting cognitive and behavioral homogeneity. We propose that epistemic norms of remembering are gradually acquired and internalized in practices of joint reminiscing between children and adult caregivers, a crucial component in an extended process of normative enculturation. We also explore the close relationship between episodic memory and imagination, highlighting the ways in which simulated vicarious experiences function as socio-cognitive tools, transforming us into more easily interpretable cognitive objects. The chapter concludes by emphasizing the need for further research to elucidate the varieties and extent of memory mindshaping, shedding light on the nature of episodic memory and its role in the normative enculturation of human rememberers.

1. Introduction

On the mindshaping hypothesis, folk psychology plays a primarily regulative role, shaping our mental states to align with socially shared psychological norms (McGeer 2007, 2015; Mameli 2001; Zawidzki 2008, 2013). Attributions of states such as beliefs and desires provide models we are socially incentivized to approximate, a process which gradually but systematically alters our cognition and behavior, making it easier to predict and thus facilitating social coordination. A variety of mechanisms have been thought to contribute to such mindshaping, including "distinctively human imitation, pedagogy, normative judgment and norm enforcement, the institution of social roles, and self-constituting narratives" (Zawidzki 2013: 20). These mechanisms promulgate cognitive and behavioral homogeneity, ensuring that we know which kinds of mental states to token and attribute in specific contexts, rendering us and our coordinative partners more easily interpretable. In this way, human cognition becomes normatively enculturated: as we are instructed into the folk-psychological norms of our culture, our minds are regulated and shaped to align with them. Folk psychology is thus a fundamentally mind-making enterprise (McGeer 2015).

In this chapter, we examine the hypothesis that episodic memory is a mindshaped capacity. Episodic memory is the capacity to remember personally experienced past events. It is thought to be underlaid by a dedicated neurocognitive system, which stores information about specific events (e.g., the birth of one's child), the recall of which is accompanied by a distinctive sense of "reliving" the personal past (Tulving 1983, 2002). On a prominent folk-psychological conception, which has influenced both philosophical and psychological theorizing, recalling the personal past constitutes a kind of epistemic achievement (Dummett 1994; Craver 2020). It requires not only accurate representation of a past event, but also retention of knowledge acquired via personal, first-hand experience. This conception governs the attribution of states of remembering in a variety of social practices, where witnesses are granted the epistemic privilege to speak authoritatively about what they have themselves seen or heard (Mahr & Csibra 2018).

[1] Both authors contributed equally to this work.

Presenting evidence from cognitive, developmental, and cross-cultural psychology, we suggest that episodic memory is mindshaped for the purposes of interpersonal and social coordination. This occurs via imitation, (natural) pedagogy, narrative scaffolding as well as explicit norm articulation and enforcement. In section 2, we examine ways in which cultural norms and practices shape memory states and behavior, promoting homogeneity. In section 3, we turn our attention to cognitive development. We propose that epistemic norms of remembering are gradually acquired and internalized in practices of joint reminiscing between children and adult caregivers. In section 4, we highlight the ways in which the constructive nature of memory facilitates mindshaping and the development of widely shared memories. Finally, in section 5, we briefly explore the connection between memory and imagination, focusing on the cognitive and social importance of vicarious experiences.

Mindshaping processes, we argue, have transformative effects, producing memory states and behavior characteristic of, and likely unique to, enculturated human beings.

2. Remembering the Same Things: Culture and Gender

The mindshaping hypothesis predicts cognitive and behavioral homogeneity, facilitating interpersonal coordination. Such homogeneity is achieved primarily through socialization, with the gradual acquisition of folk-psychological norms affecting both cognitive processing and the typical contents of resultant mental states. In the memory literature, a particular area of interest has been the influence of cultural norms and practices on episodic remembering. If memory is indeed mindshaped—constrained and regulated via an extended process of socialization—then we should expect some cultural differences in remembering and memory reports.[2] At a minimum, members of particular cultural and social groups should be more likely to remember past events in similar ways. More boldly, such similarity should reflect common epistemic, relational, and communicative attitudes (Hirst & Echterhoff 2012).

The cultural influence on memory was first illustrated in pioneering work by Frederic Bartlett almost a century ago. Bartlett had the subjects in his experiment, "educated and rather sophisticated" students at the University of Cambridge (Bartlett 1932: 64), read an unfamiliar Native American folktale called The War of the Ghosts. On subsequent memory tests, he found that his subjects' memories for the story exhibited significant and systematic distortions. Crucially, in repeated reproductions, subjects drew more heavily on familiar cultural schemas, with the initially unfamiliar narrative gradually altered to better fit English cultural norms and expectations. Remembering, Bartlett concluded, involves an active process of interpretation and reconstruction, where "social organization gives a persistent framework into which all detailed recall must fit, and it very powerfully influences both the manner and the matter of recall" (Bartlett 1932: 296).

More recently, the cultural influence on memory processes has been studied in a comparative manner. The majority of studies have compared members of Western (typically: European or North American) and Eastern (typically: East or Southeast Asian) cultures. The core finding pertains to the focus and specificity of memories. While Westerners have consistently exhibited superior memory for specific object features or details (Millar et al. 2013; Paige et al. 2017), Easterners have been reported to prioritize contextual information and inter-object—or inter-personal—relationships (Masuda & Nisbett 2001; Boduroglu et al. 2009). These cultural differences, indeed, appear to emerge at multiple representational levels (Leger, Cowell & Gutchess 2024). Relatedly, Westerners have been reported to construct more detailed

[2] For brevity, we will often use "memory" and "remembering" in the main text. Unless otherwise specified, these refer to *episodic* memory and remembering, respectively.

autobiographical narratives, which focus on their own activities, thoughts, and feelings; in comparison, Easterners' autobiographical narratives have been found to be more general, less detailed, and—importantly—more communal, with rememberers tending to consider their own actions in relation to the group norms and needs (Wang & Ross 2007; Fivush 2011). These differences are, at least partially, explained by differing developmental practices; paradigmatically: maternal reminiscing styles. As Fivush (2011: 569) summarizes, "mothers from Western cultures are more elaborative and focus more on the child than on the group, whereas mothers from Eastern cultures are less elaborative and more didactic, placing the child's individual experiences in the context of the group and moral behavior". It has been theorized that such cultural practices have quite significant long-term effects, possibly resulting in different conceptions of the self: a Western autonomous "independent" self and an Eastern, more communal, "interdependent" self (Oyserman & Marcus 2014; Wang & Ross 2007).

Cultural practices and norms shape memory in a variety of more specific ways, which we cannot afford to introduce here (for a review, see Wang 2021). A notable example, however, concerns memory for spatial arrangements. Levinson (1997) showed that cultural differences in spatial representation affects how people remember/report particular scenes they have experienced. To do so, he compared European (Dutch) and Guugu Yimithirr subjects (members of an Australian Aboriginal community). Dutch subjects prefer to employ "relative" (i.e., egocentric) modes of spatial description and thus to characterize spatial positions in reference to their bodies (e.g., to the left of, to the right of). In contrast, Guugu Yimithirr subjects represent spatial positions in "absolute" terms, using cardinal orientations (i.e., east, west, south, and north), and rely almost exclusively on such terms to characterize objects' spatial positions. Levinson conveyed the Dutch and Guugu Yimithirr participants to a room facing north and presented them with a row of figures—a cow, a pig, and a person. They were asked to remember this scene, and were subsequently led into a different room, which faced south, and asked to recreate the scene. The majority of the Dutch participants reconstructed the scene using the location of their bodies as the reference frame, and so the figures remained in the same order (the cow remained left of the pig, which remained to the left of the person). In contrast, most of the Guugu Yimithirr participants reconstructed the scene in reference to cardinal orientation (The cow remained west (and therefore right) of the pig, which remained west (right) of the person.) Cultural differences in spatial representation thus affected the contents of the reported memories, with the two cultural groups remembering "exactly opposite arrangements from the same scene" (Wang 2021: 155).

The cultural influence on memory has also been investigated in the context of gender differences. The focus has been on the ways in which belief and assumptions about gender show up in developmentally important practices of joint reminiscing. An early finding has been that maternal reminiscing is characteristically gendered, with mothers employing a more elaborate reminiscing style with their daughters than they do with their sons, especially when discussing past emotional experiences (Kuebli & Fivush 1992; Reese & Fivush 1993). Specifically, they use more emotion words and highlight interpersonal relationships more (Reese, Haden, & Fivush 1996).[3] Further, when reminiscing about past events that focus on particular emotions, parents discuss sadness more elaborately with their daughters but discuss anger more elaborately with their sons, in line with gender stereotypes (Fivush 1998). These differences appear to have significant long-term effects, with girls exhibiting more elaborate autobiographical memories and higher levels of socioemotional development in general (Fivush & Zaman 2013; Grysman & Hudson 2013). The contents of children's memories and memory reports, moreover, appear to be shaped to fit assumptions and beliefs about gender. Thus, while at 40 months boys and girls talk about emotions

[3] Interestingly, there may be cultural variation in the way that gender differences in reminiscing are expressed. For instance, different from the typical Western culture discussed above, it seems that Peruvian middle-class mothers are more elaborative about past emotions with their sons rather than their daughters (Melzi and Fernandez 2004).

equally frequently, 70-month girls talk about emotions more than three times as often as boys of the same age. Gender differences in emotional talk, thus, "may emerge, at least partly, due to parental goals for socialization" (Fivush & Buckner 2003: 157).

Moreover, it has been argued that specific social expectations shared by parents—e.g., about female children as "keepers" of family histories—are important causal factors in the emergence of the characteristically elaborate and emotion-oriented memory narratives exhibited by girls and, later, by women (Rosenthal 1985; Fivush 2011). Indeed, (American) adult women provide significantly more elaborative memory narratives than men and are much more likely to include references to thoughts and feelings when discussing personal experiences (for a review, see Grysman & Hudson 2013). This proposal dovetails nicely with ideas from the mindshaping literature, particularly about the ways in which gendered psychological assumptions can lead to self-fulfilling prophecies, with male and female children shaped to behave in ways that align with prevalent social and cultural expectations (Mameli 2001; Zawidzki 2013). We should, nevertheless, be cautious in interpreting these results. While a number of studies have reported gender differences in autobiographical memory, important methodological challenges—pertaining, among other things, to the operationalization and measurement of elaborativeness—remain (Grysman & Hudson 2013). Moreover, a recent meta-analysis has contested the finding that maternal elaborative style differs by child gender, pointing to the pressing need for more systematic and careful research (Waters et al. 2019).

In this section, we have examined cultural influences on memory content, focusing on the ways in which the latter is shaped and regulated to conform with societal norms and expectations. In the next section, we turn to the idea that remembering the personal past is a more thoroughly mindshaped capacity, constitutively depending on an extended process of normative enculturation.

3. Enculturation and Learning to Remember

One of the distinctive aspects of human social cognition is the capacity to internalize folk-psychological epistemic and semantic norms. Mindshaping mechanisms do not only promulgate homogeneity of mental content but also facilitate the selection of kinds of mental states that accord with such norms (Zawidzki 2013; Strijbos & de Bruin 2015). In this section, we apply this idea to the development of episodic memory. We propose that children become enculturated into social practices of remembering the personal past by engaging in activities such as shared reminiscing with their adult caregivers—a distinctive form of *natural pedagogy* (Csibra & Gergely 2009). In the process, they acquire the core epistemic norms governing such practices, learning not only how to participate in them but also what it takes to succeed or fail to remember. The adherence to these norms transforms them into socially adroit rememberers who, indeed, see themselves *as* rememberers.

On the "epistemic" conception of memory, successful remembering of the personal past is essentially linked to retention of knowledge acquired via first-hand experience (Dummett 1994; Craver 2020). Despite its prominence, and importance to a range of social practices centered on witnessing and testimony, its correctness has been challenged by recent developments in the sciences of memory. Memory representations, the evidence suggests, are (re)constructed from information from a variety of sources and are systematically influenced by context as well as subjects' beliefs, moods, and goals (Schacter 2012; Roediger & DeSoto 2015). Indeed, the existence of a specialized store for information acquired first-hand has been contested, with episodic memory increasingly seen as deeply constructive and imagination-like (Schacter 2012; Michaelian 2016). We take these developments seriously. We thus suggest, following Zawidzki (2018), that the epistemic conception is not best understood as a theory aiming to characterize an innate

memory capacity. Rather, it is best seen as an idealized model, which subjects are socially incentivized to approximate, primarily for the purposes of inter-personal coordination. As subjects acquire the norms inherent to the model, they learn to attribute relevant memory states to their coordination partners, granting witnesses the privilege to speak authoritatively about events they have personally experienced. At the same time, they learn to attribute such states to *themselves,* linking memory representations to claims about the personal past. In the long run, this process systematically regulates representational outputs (to conform with the relevant norms) and has the potential to alter the functioning of memory systems.

The experimental investigation of these ideas is in its infancy and is beset by obvious methodological challenges. Yet, the study of parental *metacognitive talk* and its relationship to children's memory and metacognition has yielded promising and suggestive results (Roebers 2017; Geurten & Leonard 2023). As parental talk is quite heterogeneous, it should come as no surprise that it encompasses a variety of utterances and comments that employ words referring to mental and cognitive states. Of particular importance are *metamemory* comments, linked to beliefs about memory, its constituent operations, and the various factors that affect memory performance (Dunlosky & Thiede 2013; Godfrey et al. 2023). Metamemory comments from adult caregivers, provided in activities such as joint reminiscing and sharing stories about the past, support the development of children's memory skills *and* memory beliefs. Importantly, there is a significant class of metamemory comments which help children distinguish memory attributions, linked to personal experiences, from other forms of knowing the past such as testimonial knowledge. These scaffold children's emerging sensitivity to the "epistemic value of first-person experience" (Henry & Craver 2018: 28) and mastery of the rules of successful remembering.

The pioneering work in this area has been done by Elaine Reese and her collaborators. Hypothesizing that maternal metamemory comments play a key causal role in children's emerging understanding of the link between remembering and personal experience, they have investigated such comments in the context of joint reminiscences and shared narratives about the past. In an important study, Reese & Cleveland (2006) showed that maternal metamemory comments frequently concern the differentiation of sources of knowledge as well as the link between remembering and visual access to knowledge. A typical example (2006: 35) sees a mother ask her child a question about the people present at a fireworks celebration:

M: . . . Was there any other people there?
C: Ahhh, David.
M: No, he wasn't (laughs).
C: Yes, he was.
M: Oh, he was but we didn't see him, did we?
C: Nah.

The mother accepts that David was present at the celebration, but "her response tells the child that mentioning him does not count as a true memory because the child simply knew that David had been at the event but had not personally experienced David's presence at the event" (2006: 35). A comment of this type instructs the child on the essential link between the personal experience of an event and a subsequent memory of it. It supports the child's developing sensitivity to the importance of the link and makes possible the eventual explicit understanding and articulation of the relevant epistemic/semantic norm. Indeed, Reese & Cleveland found that mothers' metamemory comments correlated with children's differentiation of the sources of knowledge and with their understanding of mind in general. A number of studies have similarly linked maternal elaborations with children's source understanding and theory of mind (e.g., Welch-Ross 1997; Ruffman, Slade & Crowe 2002; Slaughter, Peterson & Mackintosh 2007; for a review,

see Fivush 2011). Moreover, parental elaborativeness in reminiscing has been consistently found to predict children's source monitoring and resistance to false suggestions (e.g., Klemfuss, Rush & Quas 2016; Principe et al. 2017; see Klemfuss & Olaguez 2020).

Further, caregivers' metamemory comments about the nature of remembering and forgetting plausibly influence children's understanding of these capacities, their metacognitive skills as well as their ability to reliably distinguish appropriate from inappropriate memory claims. Reese & Cleveland, again, provide illustrative examples of comments pertaining to, e.g., the low likelihood of remembering a temporally distant experience or of remembering someone after a single meeting:

M: Was there somebody else with Josh?
C: Yeah, but I don't remember his name.
M: No, his name was Dylan, wasn't it? 'Cause you only met him once, didn't ya?
C: Yeah.
M: It's a bit hard to remember him.

Steadily accumulating evidence indicates that parental elaborations of this kind causally affect children's metamemory and thus performance on memory tasks. Güler et al. (2010), for example, found that strategic metacognitive information provided by mothers during a collaborative sort-recall task correlated with the children's own use of relevant strategies as well as with performance on the task. More directly, Geurten & Leonard (2024) demonstrated that the effect of parental metacognitive elaborations on children's memory performance in a cued recall task was mediated by the children's metacognitive (metamemory) skills. This finding is particularly important given that children's metamemory has been linked to success in a variety of memory tasks (Lavis & Mahy 2021; Ruggeri et al. 2019).

These results should make us reasonably optimistic about the prospects of our hypothesis. Yet, we should proceed with care. First, as noted above, the experimental study of these ideas is still in its nascent stage. Future work should aim at testing specific mindshaping claims more directly, carefully disentangling and operationalizing key notions. Second, while the "epistemic" conception of memory is widespread and prominent, it is possible—and perhaps even plausible—that folk-psychological conceptions of memory vary across cultures.[4] Finally, and perhaps most importantly, how extensive the mindshaping of memory is remains an open question (McCarroll, Andonovski & Zawidzki, in preparation). On a conservative construal, memory is only affected at its "surface", with memory claims and reports shaped via socio-cultural calibration of linguistic or metacognitive operations (cf. Mahr et al. 2023). A bolder hypothesis sees mindshaping processes as "get[ting] under the skin" (Menary 2012: 152) and (gradually) altering the functioning of memory processes themselves. On this construal, folk-psychological conceptions of episodic memory may function as self-fulfilling prophecies.

[4] The evidence for this is scant. However, there are intriguing suggestions about how memory may become untethered from what we might typically consider the proper bounds of personally experienced events. Saladin D'Anglure (2018) notes the prevalence of "womb memories", memories of being in the womb or being born, in the Inuit of Canada. Rather than breaking the normative constraints on remembering, "womb memories are for Inuit a narrative genre that transcends the generations and the great changes their society has undergone. Such memories tap into the core of their value system—the reproduction of life" (2018: 282). Future work should shed more light on the tantalising prospect that normative conceptions of memory, and possibly even memory states themselves, vary across cultures.

4. Mindshaping and Constructive Memory

The careful reader may notice an apparent tension between the mindshaping hypothesis and key developments in the sciences of memory. Two such developments, which we have already alluded to above, are particularly noteworthy. The first concerns the *constructive* nature of memory. Memory systems regularly draw on a variety of sources of information to construct representations and are thus prone to systematic errors and biases (Schacter 2012; Roediger & DeSoto 2015). The second concerns the close link between episodic memory and imagination, hypothesized to be underlaid by a common neurocognitive system for *simulating* possible events (Schacter 2012; Michaelian 2016). The characterization of memory as a constructive and simulational capacity seems at odds with a "deep" mindshaping hypothesis, according to which mindshaping truly gets "under the skin" and alters memory processes. If memory does draw on a variety of sources and does not privilege information acquired via first-hand experience, then it simply does not operate in accordance with the epistemic conception, in the short *or* long run (cf. Michaelian 2016). Caution requires a divide-and-conquer strategy when dealing with this apparent tension. We recognize that the compatibility of the "deep" hypothesis with the constructive and simulational nature of memory remains unclear, an issue which we aim to address on another occasion (McCarroll, Andonovski & Zawidzki, in preparation). Here, however, we focus on a more conservative hypothesis. We argue that, contrary to appearances, the constructive and simulational nature of memory supports and facilitates mindshaping of memory *representations and reports*. In this section, we explore memory construction; in the next one, we turn to simulation.

Constructive memory mechanisms promulgate cognitive and behavioral homogeneity, leading to convergent—and thus more easily predictable—representations of the past. We already saw this process at work in Bartlett's (1932) seminal study of memory reproduction. Relying on familiar narrative schemas, Bartlett's subjects adopted an unfamiliar tale to better fit their cultural norms and expectations. We also saw that members of particular social groups are likely to *share* cognitive schemas and frameworks, thus tending to remember past events in similar ways. Crucially, it is precisely the constructive nature of memory mechanisms—allowing for incorporation of prior knowledge and testimonial information—that makes such homogenization possible. Moreover, as memories are shared in conversations and joint reminiscences, further opportunities for (re)construction and socially-guided reshaping arise. The consequences of these processes are far-reaching. Constructive memory mechanisms allow us to mold and negotiate the meanings of our experiences together, with successful representations of the past often constituting complex epistemological and ethical achievements (Campbell 2014).

Extant empirical research points to a number of ways in which memory construction supports mindshaping. Testimonial incorporation, typically studied in the context of "diagnostic" memory errors, is perhaps most well-known. Decades of research have revealed that even the use of specific words to describe an event can affect how it is represented and subsequently remembered (Loftus 1996). This is of obvious significance in conversational settings: how *you* describe an event can affect how *I* remember it, making our understanding more alike (Loftus 2005). Indeed, there is a burgeoning research program examining how conversations about the past affect both speakers and listeners, resulting in common memories and similar beliefs, judgments, and attitudes—a "shared reality" (Hirst & Echterhoff 2012). An interesting example of this is *audience tuning:* the goal-dependent adaptation of a message to the assumed attitudes and characteristics of the audience. Through such conversational tuning, subjects often "will come to believe and remember what they said to their audience rather than what they originally learned" (Hirst & Echterhoff 2012: 70). Changes in communicated messages, in other words, can lead to changes in the contents of memories and beliefs—a *saying-is-believing* effect (Echterhoff et al. 2009). Importantly, the presence of this bias in memory seems to depend on the speakers' motives; i.e., on whether they are moved to create a shared reality with their listeners. Hence, while audience tuning can occur for both in-

group and out-group listeners, the saying-is-believing effect and the concomitating restructuring of memory contents seem to typically occur only for in-group listeners (Echterhoff et al. 2008).[5]

A century after Bartlett, memory schemas have been studied extensively and are now believed to influence memory representations from encoding through consolidation to retrieval (Ghosh & Gilboa 2014). Recent theoretical and experimental work has started to identify the cultural underpinnings and use of such schemas and the role(s) they play in the construction, transmission, and convergence of memory representations (Brown, Kouri & Hirst 2012; Wang 2021). Research on "social contagion" has highlighted the ways in which constructive processes facilitate the spread of memories from one person to another, accompanied by gradual but systematic, and occasionally drastic, alterations of their contents (Loftus 2005; Hirst & Echterhoff 2012). Socially shared retrieval induced forgetting is another way in which constructive mechanisms can lead to convergent memory representations. When people discuss the past together, recalling certain details makes it harder to remember unrecalled but related details, both for the person actively recalling *and* for the listener (Stone et al. 2012). This malleability facilitates convergence and the transformation of "individual memories into shared, and subsequently collective memories" (Brown, Kouri & Hirst 2012: 3).

The notion of collective memory has indeed played an important role in conceptualizing memory representations shared across, and relevant to the identities of, particular communities (Hirst & Echterhoff 2012). The use of the notion involves commitment to the socially mediated construction of convergent memory representations but *not*, at least typically, commitment to a genuinely collective or group mind. Zawidzki (2013) situates the notion in the mindshaping landscape, observing that the joint recollection of important public events can regulate and integrate apparently heterogenous individual memories into group-constituting narratives. For him, the formation of collective memory is thus "a great example of mindshaping working to make fast and frugal social cognition more reliable by homogenizing human populations" (2013: 86). Importantly, as we have tried to emphasize in this section, constructive memory processes play a key role in this process. We expect future theoretical and experimental work to build on these results, to elucidate the various forms of constructive mindshaping of memory, and to integrate research on individual and collective memory.

5. Memory, Simulation, and Episodic Vicarious Learning

Episodic memory and imagination are closely related. Neural and behavioral evidence reveal that both employ common computational and representational resources, typically seen as simulational in nature (Schacter 2012). Indeed, on a popular family of theories, the two capacities are seen as supported by a shared neurocognitive system for simulating possible events and scenarios (Michaelian 2016; Addis 2020). While we remain unconvinced by these theories (Andonovski, Sutton & McCarroll, forthcoming), we nevertheless acknowledge that memory strongly, and perhaps even constitutively, depends on processes of episodic simulation. In this final section, we point to the ways in which these processes, employed in both remembering and imagination, support forms of mindshaping.

Our focus will be on so-called vicarious experiences. Discussing the epistemic conception of memory, we have highlighted the importance of direct, first-person experience. Humans, however, can also learn about the world *in*directly, by observing, listening to, or imitating others—and

[5] One might worry here that the notion of shared reality presupposes mindreading. Indeed, it does. Yet, it is worth highlighting that proponents of mindshaping do not typically deny that mindreading is an important aspect of folk psychology; they merely deny that it is the only, or even the primary, one. Further, mindshaping likely plays a key role in the initial construction of the "shared reality".

indeed do so in a variety of ways (Bandura 1977). One particular form of *vicarious learning,* receiving some attention in the recent literature, involves processes of episodic simulation (Pillemer et al. 2015, 2024; Keven 2024). In what may, somewhat provocatively, be called *episodic* vicarious learning, subjects learn by listening to others' recounting their personal experiences and by subsequently simulating them—employing the representational resources of episodic thought. By doing so, they put themselves in a position to acquire knowledge of aspects of the world they haven't personally experienced; "extending" their personal experience, as it were (Keven 2024). Crucially, this type of learning is only possible because episodic simulation processes, employed in remembering the personal past, can also be employed in imagination—of one's own possible experience but also of the experiences of others (Schacter 2012; Addis 2020). Such interpersonal simulation is typically occasioned by linguistic communication: people sharing and discussing their experiences, emotions, and (often) thoughts about others. Indeed, in this context at least, language can be seen as a "social communication technology" that can provide instructions to imagination:

> [It] allows speakers to intentionally and systematically instruct their interlocutors in the process of imagining the intended experience, as opposed to directly experiencing it. Speakers provide interlocutors with a code, a skeletal list of the basic coordinates of the experience. Following the code, the interlocutors raise past experiences from their memories, and then reconstruct and recombine them to produce novel, imagined experiences. (Shilton et al. 2020: 13; cf. Dor 2015).

Episodic vicarious learning supports mindshaping in two, closely related, ways. First, in relying on "skeletal lists" of experiential coordinates to put themselves in others' shoes, subjects are instructed into the *specific* ways in which their interlocutors experience the world. They learn not only about personally unexperienced events but also about the beliefs, moods, emotions, and values that "filter" their interlocutors' understanding of these events. Episodic simulation of this kind, traditionally linked to mindreading and empathy (Shanton & Goldman 2010), has significant long-term effects, facilitating the interpersonal calibration of mental states. It promotes the kind of cognitive and behavioral homogeneity we have highlighted, often by making possible the stabilization of beliefs and experiences constitutive of cultural group identities. Yet, it can also support *cross*-cultural learning and engagement with the beliefs and experiences of other groups (Fox 2003). Second, episodic vicarious learning facilitates the articulation, sharing, and enforcement of social norms. This is particularly conspicuous in a developmental context, with parents "frequently shar[ing] personal memories to shape children's behaviors or to regulate their emotional responses" (Pillemer et al. 2024: 5). When, for example, a child is engaged in a potentially dangerous behavior, or has committed some transgression, parents often recount similar events from their personal lives. They do so with the intention of providing a model that specifies the potential consequences of the action—and thus to shape the child's future behavior. Indeed, as Keven (2024) has observed, people generally prioritize the sharing of experiences about events in which a norm is violated by a member of the group. While the reasons for this are multifarious, they plausibly involve the articulation of norms, expected to regulate relevant social behaviors, and the tracking of the ethical and epistemic reputations of potential coordinative partners.

Pillemer and colleagues (2015) provide an illustrative example of the role vicarious learning can play in mindshaping. It concerns African American basketball legend Bill Russell, who used a story of his grandfather standing up to the Ku Klux Klan (recounted by Russell's father), as a template for shaping his own mental life and character. Russell reflects how, as a young man, he internalized his grandpa's motto of drawing a line inside himself that he won't allow any man to cross. This motto shaped many aspects of his mind, informing his attitudes and behaviors (see Pillemer et al. 2015). Russell, to put the point in our idiom, used his grandfather's memory as a regulative "virtual model". As Zawidzki (2013) has argued, mindshaping often involves subjects aiming to match the behavior of such virtual models. These may be fictional—mythical protagonists or invented moral

exemplars—or simply characters of stories shared by relatives or friends. They provide narrative exemplars of behaviors, evaluated positively or negatively by storytellers, and thus guide and inform our future actions. Linguistically narrated and episodically simulated, vicarious experiences can function as *socio-cognitive tools*, transforming our cognitive agencies and turning us into more easily interpretable cognitive objects (Zawidzki 2021).

We close this chapter by highlighting the close connection between vicarious experiences and episodes of remembering the personal past. As we have seen, both employ episodic simulation processes and are even hypothesized to be underlaid by a common neurocognitive system. Accordingly, they share key characteristics—both typically involve vivid visual imagery and elicit strong emotional and physical responses—and are, moreover, believed to fulfil many of the same psychological functions (Pillemer et al. 2015, 2024). For these reasons, theorists are increasingly comfortable with characterizing simulated vicarious experiences as genuinely mnemic and as being of the same natural kind as episodic memories (Pillemer et al. 2015, 2024; Werning 2020). Indeed, the term "vicarious memory" has slowly become an acceptable, and perhaps even preferred, currency in the literature. Whether such use is warranted is a fascinating question, the answer to which will have to wait for a fuller understanding of episodic simulation and the relationship between memory and imagination. Whatever the ultimate verdict, it is undoubtable that vicarious experiences play an important role in mindshaping, bridging the gap between rememberers and imaginers.

6. Concluding Remarks

The philosophy of memory is undergoing a gradual normative turn, exemplified by the increased appreciation for the importance of social and folk-psychological norms in the characterization of episodic memory success (Campbell 2014; Craver 2020; Mahr et al. 2023). Despite this, there has been very little work examining the causal accommodation of such norms. In this chapter, we have employed the mindshaping framework in an attempt to make some headway on this problem. Presenting evidence from cognitive, cross-cultural, and development psychology, we have argued that the activity of episodic memory is mindshaped through mechanisms such as natural pedagogy, schema-mediated construction, and vicarious learning. The result is a kind of cognitive, or at least behavioral, homogeneity that facilitates interpersonal prediction and coordination. Future work should elucidate the varieties and extent of such mindshaping, shedding light both on the nature of episodic memory and its role in the normative enculturation of human rememberers.

Acknowledgments
We thank Tad Zawidzki for the invitation to contribute to the volume and for his extensive support during the development of the ideas explored in the chapter. We are also grateful to Carl Craver, Johannes Mahr, and John Sutton, whose work has motivated and influenced our own. Chris McCarroll also thanks Paloma Muñoz for her help in thinking through the ideas presented in this chapter, and Elaine Reese for helpful discussion on the normative enculturation of remembering; his research was supported by a Taiwan National Science and Technology Council grant (112-2410-H-A49-084-MY3), and the French National Research Agency in the framework of the "Investissements d'avenir" program (ANR-15-IDEX-02). Nikola Andonovski's research was funded by the European Union's Horizon research and innovation program under the Marie Sklodowska-Curie grant agreement 101062754.

References

Addis, D. R. (2020). Mental time travel? A neurocognitive model of event simulation. *Review of Philosophy and Psychology*, *11*(2), 233-259.

Andonovski, N., Sutton, J., & McCarroll, C. J. (forthcoming). Eliminating episodic memory? *Philosophical Transactions of the Royal Society B.*

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, N.J.: Prentice-Hall.

Bartlett, F. (1932). *Remembering: A Study in Experimental and Social Psychology*, Cambridge University Press, New York, NY

Boduroglu, A., Shah, P., & Nisbett, R. E. (2009). Cultural differences in allocation of attention in visual information processing. *Journal of cross-cultural psychology*, *40*(3), 349-360.

Brown, A., D., Kouri, N., & Hirst, W. (2012) Memory's malleability: its role in shaping collective memory and social identity. *Frontiers in Psychology* 3:257.

Campbell, S. (2014). *Our faithfulness to the past: The ethics and politics of memory*. Oxford University Press.

Craver, C. F. (2020). Remembering: Epistemic and empirical. *Review of Philosophy and Psychology*, 11(2), 261–281.

Csibra, G., & Gergely, G. (2009). Natural pedagogy. *Trends in Cognitive Sciences*, *13*(4), 148–153.

D'Anglure, B. S. (2018). *Inuit Stories of Being and Rebirth: Gender, Shamanism, and the Third Sex* (Vol. 6). University of Manitoba Press.

De Brigard, F. (2014). Is memory for remembering? Recollection as a form of episodic hypothetical thinking. *Synthese*, 191, 155-185.

Dor, D. (2015). *The Instruction of Imagination: Language as a Social Communication technology*. Oxford: Oxford University Press

Dummett, M. (1994). Testimony and memory. In B. K. Matilal & A. Chakrabarti (Eds.), *Knowing from words* (pp. 251–272). Dordrecht: Kluwer

Dunlosky, J., & Thiede, K. W. (2013). Metamemory. In D. Reisberg (ed.), *The Oxford handbook of cognitive psychology* (pp. 283–298). New York: Oxford University Press.

Echterhoff, G., Higgins, E. T., Kopietz, R., & Groll, S. (2008). How communication goals determine when audience tuning biases memory. *Journal of Experimental Psychology: General*, 137, 3–21.

Echterhoff, G., Higgins, E. T., & Levine, J. M. (2009). Shared reality: experiencing commonality with others' inner states about the world. *Perspectives on Psychological Science*, 4, 496–521.

Fivush, R. (1998). Gendered narratives: Elaboration, structure and emotion in parent–child reminiscing across the preschool years. In C. P. Thompson, D. J. Herrmann, D. Bruce, J. D. Read, D. G. Payne, & M. P. Toglia (Eds.), *Autobiographical memory: Theoretical and applied perspectives* (pp. 79–104). Mahwah, NJ: Erlbaum.

Fivush, R. (2011). The development of autobiographical memory. *Annual Review of Psychology* 62, 559–582.

Fivush, R., & Buckner, J. P. (2003). Creating gender and identity through autobiographical narratives. *Autobiographical memory and the construction of a narrative self: Developmental and cultural perspectives*, 149-167.

Fivush, R. & Nelson, K. (2006). Parent–child reminiscing locates the self in the past. *British Journal of Developmental Psychology*. 24: 235–51.

Fivush, R., & Zaman, W. (2013). Gender, subjective perspective, and autobiographical consciousness. *The Wiley handbook on the development of children's memory*, *1*, 586-604.

Fox, F.F., (2003). Reducing intercultural friction through fiction: virtual cultural learning. *International Journal of Intercultural Relations* 27, 99–123.

Geurten, M., & Léonard, C. (2023). Relations between parental metacognitive talk and children's early metacognition and memory. *Journal of Experimental Child Psychology*, *226*, 105577.

Ghosh, V. E., & Gilboa, A. (2014). What is a memory schema? A historical perspective on current neuroscience literature. *Neuropsychologia*, *53*, 104-114.

Godfrey, M., Casnar, C., Stolz, E., Ailion, A., Moore, T., & Gioia, G. (2023). A review of procedural and declarative metamemory development across childhood. *Child Neuropsychology*, *29*(2), 183-212.

Grysman, A., & Hudson, J. A. (2013). Gender differences in autobiographical memory: Developmental and methodological considerations. *Developmental Review*, *33*(3), 239-272.

Güler, O. E., Larkina, M., Kleinknecht, E., & Bauer, P. J. (2010). Memory strategies and retrieval success in preschool children: Relations to maternal behavior over time. *Journal of Cognition and Development,* 11, 159–18

Heal, J. (1998). "Co-cognition and Off-line Simulation: Two Ways off Understanding the Simulation Approach." *Mind and Language* 13 (4): 477–498.
Henry J., & Craver, C. (2018). Episodic memory and the witness trump card. *Behavioral and Brain Sciences* 41, e16.
Hirst W, Echterhoff G. (2012). Remembering in conversations: the social sharing and reshaping of memories. *Annual Review of Psychology*, 63, 55-79.
Keven, N. (2024). Can episodic memory deter cheating and promote altruism?. *Synthese*, *203*(5), 1-18.
Klemfuss, J. Z., Rush, E. B., & Quas, J. A. (2016). Parental reminiscing style and children's suggestibility about an alleged transgression. *Cognitive Development*, *40*, 33-45.
Klemfuss, J. Z., & Olaguez, A. P. (2020). Individual differences in children's suggestibility: An updated review. *Journal of child sexual abuse*, *29*(2), 158-182.
Kuebli, J., & Fivush, R. (1992). Gender differences in parent-child conversations about past emotions. *Sex Roles*, *27*(11), 683-698.
Lavis, L., & Mahy, C. E. (2021). "I'll remember everything no matter what!": The role of metacognitive abilities in the development of young children's prospective memory. *Journal of Experimental Child Psychology*, *207*, 105117.
Leger, K. R., Cowell, R. A., & Gutchess, A. (2024). Do cultural differences emerge at different levels of representational hierarchy?. *Memory & Cognition*, *52*(2), 241-253.
Levinson S. C. (1997). Language and cognition: the cognitive consequences of spatial description in Guugu Yimithirr. *J. Linguist. Anthropol.* 7(1), 98–131.
Loftus, E. F. (1996). *Eyewitness Testimony*. Cambridge, MA: Harvard University Press.
Loftus, E. F. (2005). Planting misinformation in the human mind: a 30-year investigation of the malleability of memory. Learning & Memory, 12(4), 361–366.
Mahr, J. B., & Csibra, G. (2018). Why do we remember? The communicative function of episodic memory. *Behavioral & Brain Sciences*, 41, e1.
Mahr, J. B., Van Bergen, P., Sutton, J., Schacter, D. L., & Heyes, C. (2023). Mnemicity: A cognitive gadget?. *Perspectives on Psychological Science*, *18*(5), 1160-1177.
Masuda, T., & Nisbett, R. E. (2001). Attending holistically versus analytically: comparing the context sensitivity of Japanese and Americans. *Journal of personality and social psychology*, *81*(5), 922.
McCarroll, C., Andonovski, N. & Zawidzki, T. (in preparation). Mindshaping memory.
McGeer, V. (2007). The regulative dimension of folk psychology. In D. D. Hutto and M. Ratcliffe (eds.), *Folk-psychology Reassessed* (pp 137–156). Dordrecht: Springer.
McGeer, V. (2015). Mind-making practices: The social infrastructure of self-knowing agency and responsibility. *Philosophical Explorations*, 18(2), 259–281.
Mameli, M. (2001). Mindreading, mindshaping, and evolution. Biol. Philos. 16(5), 597–628.
Melzi, G., & Fernandez, C. (2004). Talking about past emotions: Conversations between Peruvian mothers and their preschool children. *Sex Roles*, 50, 641–657.
Menary, R. (2012). Cognitive practices and cognitive character. *Philosophical Explorations*, 15, 147–164.
Michaelian, K. (2016). *Mental Time Travel: Episodic Memory and Our Knowledge of the Personal Past*. Cambridge: MIT Press.
Millar, P. R., Serbun, S. J., Vadalia, A., & Gutchess, A. H. (2013). Cross-cultural differences in memory specificity. *Culture and Brain*, *1*, 138-157.
Nichols, S., and Stich, S. P. (2003). *Mindreading: An Integrated Account of Pretence, Self-Awareness, and Understanding Other Minds*. Oxford: Clarendon Press.
Oyserman, D., & Markus, H. R. (2014). The sociocultural self. In *Psychological Perspectives on the Self, Volume 4* (pp. 187-220). Psychology Press.
Paige, L. E., Ksander, J. C., Johndro, H. A., & Gutchess, A. H. (2017). Cross-cultural differences in the neural correlates of specific and general recognition. *Cortex*, *91*, 250-261.
Pillemer, D. B., Steiner, K. L., Kuwabara, K. J., Thomsen, D. K., & Svob, C. (2015). Vicarious memories. *Consciousness and cognition*, *36*, 233-245.
Pillemer, D. B., Thomsen, D. K., & Fivush, R. (2024). Vicarious memory promotes successful adaptation and enriches the self. *Journal of Applied Research in Memory and Cognition*.
Principe, G. F., Trumbull, J., Gardner, G., Van Horn, E., & Dean, A. M. (2017). The role of maternal elaborative structure and control in children's memory and suggestibility for a past event. *Journal of Experimental Child Psychology*, *163*, 15-31.

Reese, E., & Cleveland, E. S. (2006). Mother-Child Reminiscing and Children's Understanding of Mind. *Merrill-Palmer Quarterly*, 52(1), 17–43.
Reese, E., Haden, C., & Fivush, R. (1996). Mothers, father, daughters, sons: Gender differences in autobiographical reminiscing. *Research on Language and Social Interaction,* 29, 27–56.
Reese, E., & Fivush, R. (1993). Parental styles of talking about the past. *Developmental psychology*, *29*(3), 596.
Roebers, C. M. (2017). Executive function and metacognition: Towards a unifying framework of cognitive self-regulation. *Developmental Review,* 45, 31–51
Roediger, H. L, & DeSoto, K. A (2015) Reconstructive memory, psychology of. In J. Wright (ed.), 2nd (ed) *International encyclopedia of the social & behavioral sciences* (pp 50–55). Oxford: Elsevier.
Rosenthal, C. J. (1985). Kinkeeping in the familial division of labor. *Journal of Marriage and the Family*, 965-974.
Ruffman, T., Slade, L., & Crowe, E. (2002). The relation between children's and mothers' mental state language and theory-of-mind understanding. *Child development*, *73*(3), 734-751.
Ruggeri, A., Markant, D. B., Gureckis, T. M., Bretzke, M., & Xu, F. (2019). Memory enhancements from active control of learning emerge across development. *Cognition*, *186*, 82-94.
Schacter, D. L. (2012). Constructive memory: past and future. *Dialogues in clinical neuroscience*, *14*(1), 7-18.
Shanton, K., & Goldman, A. (2010). Simulation theory. *Wiley Interdisciplinary Reviews: Cognitive Science*, *1*(4), 527-538.
Shilton, D., Breski, M., Dor, D., & Jablonka, E. (2020). Human social evolution: self-domestication or self-control?. *Frontiers in Psychology*, *11*, 134.
Slaughter, V., Peterson, C. C., & Mackintosh, E. (2007). Mind what mother says: Narrative input and theory of mind in typical children and those on the autism spectrum. *Child development*, *78*(3), 839-858.
Stone, C. B., Coman, A., Brown, A. D., Koppel, J., & Hirst, W. (2012). Toward a science of silence: The consequences of leaving a memory unsaid. *Perspectives on Psychological Science*, *7*(1), 39-53.
Strijbos, D., & de Bruin, L. (2015). Self-Interpretation as First-Person Mindshaping: Implications for Confabulation Research. *Ethical Theory and Moral Practice*, 18, 297–307.
Sutton, J. (2002). Cognitive conceptions of language and the development of autobiographical memory. *Language & Communication*, 22, 375-390.
Tulving, E. (1983). *Elements of Episodic Memory*. Oxford: Oxford University Press.
Tulving, E. (2002). Episodic Memory: From Mind to Brain. *Annual Review of Psychology*, 53(1), 1–25.
Wang, Q. (2021). The Cultural Foundation of Human Memory. *Annual Review of Psychology*, 4(72), 151–179.
Wang, Q., & Ross, M. (2007). Culture and memory. *Handbook of cultural psychology*, *18*, 645-667.
Waters, T. E., Camia, C., Facompré, C. R., & Fivush, R. (2019). A meta-analytic examination of maternal reminiscing style: Elaboration, gender, and children's cognitive development. *Psychological bulletin*, *145*(11), 1082.
Welch-Ross, M. K. (1997). Mother–child participation in conversation about the past: Relationships to preschoolers' theory of mind. *Developmental Psychology*, *33*(4), 618.
Werning, M. (2020). Predicting the past from minimal traces: Episodic memory and its distinction from imagination and preservation. *Review of philosophy and psychology*, *11*(2), 301-333.
Zawidzki, T. W. (2008). The function of folk psychology: mind reading or mind shaping? *Philosophical Explorations*, 11(3), 193–210.
Zawidzki, T. W. (2013). *Mindshaping: A New Framework for Understanding Human Social Cognition*. Cambridge: MIT Press.
Zawidzki, T. W. (2018). Self-Interpretation as Software: Toward a New Understanding of Why False Self-Conceptions Persist. *Third-Person Self-Knowledge, Self-Interpretation, and Narrative*, 115-144.
Zawidzki, T. W. (2021). A new perspective on the relationship between metacognition and social cognition: metacognitive concepts as socio-cognitive tools. *Synthese*, 198, 6573–6596.