

**Future perspectives on the role of vantage point in memories**

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### Abstract

Replies to the comments made by Talarico (see record [2024-72772-001](#)), McCarroll and Lin (see record [2024-72772-002](#)), Siedlecki and Falzarano (see record [2024-72772-003](#)), and Libby (see record [2024-72772-004](#)) on the current authors original article (see record [2024-33565-001](#)). The target review by St. Jacques (2024) suggests that the presence of observer-like perspectives does not necessarily imply memory distortion and offers recommendations to legal practitioners based on empirical research. The commentaries to this review echo these ideas but also highlight that much is still unknown regarding the role of visual perspective in memory. In this reply, I offer novel directions for future research on visual perspective in memory by summarizing the ideas in each commentary. These suggestions point to the importance of future research investigating the type of perspective, type of memory, retrieval process involved, and type of accuracy/distortion measured. Together these articles may serve to motivate the next 40 years of research and help to better inform our understanding of visual perspective in memory in applied settings.

**Keywords:** Visual Imagery; Autobiographical Memory; False Memory; Episodic Memory

Empirical investigation on visual perspective memories for events, including autobiographical memories and episodic memories for events encoded in the lab and the real-world, is now in its fourth decade (Nigro & Neisser, 1983). Yet, there is still much that is unknown about how our subjective point-of-view impacts the accuracy of our memories. Early studies investigating visual perspective in memory highlighted how the viewpoint adopted during remembering contributed to memory phenomenology (e.g., D'Argembeau et al., 2003; Nigro & Neisser, 1983; Robinson & Swanson, 1993) and suggested that viewpoint is linked to the accuracy (Berntsen & Rubin, 2006; Talarico & Rubin, 2003) and even the distortion (Heaps & Nash, 2001; Porter et al., 1999) of memories. However, for much of the last 40 years visual perspective was neglected in the field of memory and when mentioned in research was often considered to be an add on or something to control for when studying memory rather than a central feature to be studied in its own right.

In recent years, there has been growing attention on the key role that visual perspective plays in shaping and reshaping event memories (St. Jacques, 2019) and how such findings can inform the relationship between visual perspective and memory distortion (Dranseika et al., 2021; Wardell et al., 2023). The commentaries to St. Jacques (2024) raise many exciting questions about the nature of visual perspective in memory that remain to be understood, which may inform not only memory theory but also applications in legal settings (e.g., eyewitness testimony). My aim in this reply is to bring together these points and to offer potential future directions on the role of visual perspective and to consider how these suggestions can inform the recommendations made.

### **Type of Perspective**

Visual perspective is typically described and measured based on its dual nature of involving own eyes and/or observer-like perspectives. However, in practice people sometimes report that they can view memories from multiple perspectives (Rice & Rubin, 2009, 2011) and there is growing interest in moving beyond this simple dichotomy (Peeters et al., 2023). Based on tetrahedral model (Talarico, 2023), Talarico (2024) highlights how an interdisciplinary approach could be used to further understand the nature of visual perspective in context. For example, she suggests that different camera angles in film and transitions between perspectives could be applied to how visual perspective is represented in memory. Similarly, cognitive ethology approaches argue that that studying behavior in situ should be the first step to revealing novel factors that contribute to how people understand point-of-view in everyday life (Chisholm et al., 2014). Consideration of these real-world uses of viewpoint may lead to more nuanced ways of measuring visual perspective in memory, and help to increase the relevance of laboratory findings to applied contexts.

### **Type of Memory Retrieval**

Remembering can involve complex retrieval processes that are sometimes extended in time and require effort (Cabeza & St Jacques, 2007), but can also occur more quickly and/or without conscious effort (Berntsen, 1996; Uzer et al., 2012). McCaroll and Lin (2024) raise the important question of how visual perspective can impact these different forms of memory retrieval. According to Conway and colleagues (Conway, 2005; Conway & Pleydell-Pearce, 2000) memory cues can trigger a generative and effortful retrieval process that involves searching through higher levels of abstract knowledge to zoom in on a single episode, or a more direct and automatic retrieval process in which the cue triggers event specific knowledge without

additional search through the hierarchy. Memory retrieval can also be distinguished by whether it occurs voluntary or involuntary (Berntsen, 1996), and there are some parallels between direct and involuntary modes of retrieval (Berntsen, 2023). McCarroll and Lin (2024) propose that involuntary and direct voluntary memories are associated with feelings of fluency that contribute to differences in the visual perspective adopted because such metacognitive processes may signal differences in memory reconstruction. Yet, others have argued that both involuntary and direct retrieval involve memory reconstruction (Berntsen & Nielsen, 2022), irrespective of the ease with which such memories are retrieved. Supporting these ideas, several studies have reported a lack of difference in the visual perspective adopted for involuntary and voluntary memories (for review see Berntsen, 2023).

Research comparing direct and generative retrieval have also reported mixed findings in visual perspective in memory. Harris et al. (2015) found that direct retrieval led to more own eyes, whereas generative retrieval led to more observer-like perspectives in autobiographical memory. They interpreted this finding as reflecting the idea that the mode of retrieval influences how memories are accessed as well as how the content of events is reconstructed. In contrast, Addis et al., (2012) reported no differences in the proportion of memories associated with own eyes or observer-like-perspectives for memories retrieved in direct and generative conditions, although they reported neural differences associated with changes in the content of direct and generatively retrieved memories. Future research is needed to disentangle the complex retrieval processes that contribute to observer-like perspectives, and the degree to which they reflect reconstruction of different kinds of memory content. As McCarroll and Lin (2024) rightly point out that there are a number of additional factors that can contribute to the

subjective experience that contributes to observer perspectives and which may contribute to further insight into the nature of different vantage points in memories. Moreover, these different types of retrieval processes could also yield different types of autobiographical memories as discussed below.

### **Type of Memory**

Much of the empirical research on visual perspective has focused on discrete episodes that occur at a particular moment in time. However, event memories frequently blur these boundaries, such as when people recall autobiographical memories that are extended in time (e.g., summer vacation) or involve repeated experiences of similar episodes (e.g., going to the gym). Autobiographical memories can be distinguished by specificity at three different levels including: 1) life-time periods that involve more abstract knowledge about oneself during a longer period of life (e.g., when I was in university), 2) general events that comprise repeated and extended episodes in time (e.g., attending class at university), and 3) event specific memories that occur at a particular place and time (e.g., first day of university; Conway & Pleydell-Pearce, 2000).

Both Talarico (2024) and Libby (2024) raise the question of how visual perspective influences such memories. Relatively few studies have examined autobiographical memories at this more abstract level of analysis, and fewer still have examined the role of visual perspective for such memories. In one study, Piolino et al. (2006) found that the specificity with which young and older adult participants could recall autobiographical memories was associated with subjective ratings of perspective, with more abstract recall associated with higher observer perspectives. Similarly, research investigating depression has demonstrated that a lack of

memory specificity in recalling autobiographical episodes is associated with an increase in observer perspectives (e.g., Lemogne et al., 2006). In such studies, participants are instructed to recall specific episodes. Thus, potential differences in visual perspective could be related to differences in strategic retrieval processes that operate on memory rather than differences in the viewpoint when explicitly instructed to recall general versus specific events. In one study using the latter approach, Devitt et al. (2024) asked participants to recall specific (unique) and general (routine) autobiographical memories and reported no difference in the proportion of own eyes perspective across two memory conditions. Given that repeated events are frequent in everyday life and that such events may also be common in legal settings (e.g., domestic abuse) greater research is needed to target these more abstract types of autobiographical memories. One promising direction for testing these questions is through study designs in which memory for multiple instances of repeated events are examined (Dilevski et al., 2021; Rubínová et al., 2022). Characterizing how the regularities of such experiences contribute to the extraction of a more abstract memory representation and how this potentially impacts the viewpoint people adopt would be of great interest for future research. However, such research also requires a reconsideration of how accuracy is measured.

Future research would benefit from using more ecologically relevant designs to assess the impact of visual perspective on memory. Current empirical research has employed lab-based designs in which interactive events are created in the controlled setting of the laboratory (Marcotti & St Jacques, 2018; Marcotti & St. Jacques, 2022; McIsaac & Eich, 2002) or have examined autobiographical memory consistency using prospective designs (Talarico & Rubin, 2003; Wardell et al., 2023). These studies are important first steps despite the limitations that

Libby (2024) raises concerns regarding the lack of broader meaning in lab-based paradigms. Future research employing prospective or staged-event paradigms occurring in the real world (e.g., Diamond et al., 2020; St. Jacques & Schacter, 2013) would be useful steps forward in characterizing how visual perspective interacts with memory accuracy in real-world settings to better capture more meaningful experiences.

### **Type of Accuracy & Distortion**

Multifaceted approaches to measuring memory accuracy could also reveal novel insights regarding the role of visual perspective. Talarico (2024) highlights the importance of considering both subjective and objective means to characterize how visual perspective influences memory accuracy. It would be of interest to examine the relationship between subjective and objective memory accuracy with respect to visual perspective, given that in many real-world applications the ground truth may be unknown and where subjective reports related to memory confidence have been shown to be useful (Wixted & Wells, 2017). Assessing accuracy using free recall and other open-ended approaches could also better capture the correspondence between memory and the past, which may prove more relevant to eyewitness testimony than the assessing the quantity of correct information recalled (Koriat et al., 2000).

Accuracy can also be distinguished by whether it captures verbatim traces (i.e., literal and precise details) or gist traces (i.e., general meaning of an event; Brainerd & Reyna, 2002), and understanding the relationship between these two types of memory traces can provide an explanatory account of potential distortions that can occur in legal settings (Brainerd & Reyna, 2019). Visual perspective theory suggests that own eyes and observer-like perspectives focus attention on concrete versus abstract information, respectively (Libby & Eibach, 2011).



Thus, one intriguing hypothesis is that the viewpoint people adopt during retrieval may differentially affect verbatim and gist-based memory. If adopting an observer perspective focuses attention on more abstract and conceptual aspects of memory, then they should involve less accurate verbatim aspects of memory while preserving gist-based aspects of memory. A greater reliance on gist-based memory without verbatim memory can in turn contribute to memory distortion.

Understanding interactions between the type of accuracy and the type of memory queried could lead to novel hypotheses regarding the role of visual perspective. Libby (2024) suggests that measuring accuracy in terms of the broader meaning, such as through the lens of episodic memories in which people extract the commonalities across repeated events. She proposes that adopting an observer perspective for episodic memories could contribute to better memory accuracy. Other researchers have appealed to the idea of measuring accuracy across repeated events based on narrow accuracy, details for specific instances of repeated events, and broad accuracy, including all experienced details (Woiwod et al., 2019). Still, one limitation of this approach is that it does not capture a more holistic type of accuracy that emerges through the common themes across repeated episodes. A large-body of research has examined the role of schemas and scripts on memory (for review see Ghosh & Gilboa, 2014), which are viewed as higher-level constructs that extract commonalities based on multiple episodes. Moreover, recent research has aimed to understand how schemas form and influence memory (Gilboa & Moscovitch, 2021; Tomparry et al., 2020). Considering similar schema-based approaches to research on visual perspective may be one potential direction to provide empirical support for Libby's (2024) prediction.

Adopting an observer-like perspective can be considered as a type of memory distortion that contributes to errors in some characteristics of memory while preserving other aspects. Siedlecki and Falzarano (2024) highlight how observer-like perspectives in memories should be referred to as memory distortions rather than completely false memories. They present new data suggesting that observer memories are a distinct form of memory distortion such that the prevalence of adopting an observer perspective in autobiographical memories was found to be unrelated to the types of distortions people made during other types of laboratory-based tasks. One question that these findings raise is whether all observer-like perspectives equally reflect memory distortion. As St. Jacques (2024) reviewed and others have argued (e.g., Nigro & Niesser, 1983), some observer-like perspectives may be accurate representations of how events were initially experienced. More broadly, Siedlecki and Falzarano (2024) draw attention to the lack of research targeting the relationship between visual perspective and memory distortion. Although it is often assumed that observer perspectives are synonymous with memory distortion there is currently little evidence to support this idea.

## **Conclusion**

In this response I highlight how future research examining the relationship between visual perspective and memory would benefit from better understanding regarding the type of visual perspective, the nature of the underlying retrieval processes involved, the type of memory elicited, and how accuracy and distortion are measured. The commentaries help to further extend the recommendations St. Jacques (2024) proposed when considering the role of visual perspective in memory in forensic settings. Repeated events may make assessing the initial visual perspective of events challenging (recommendation 1) and should be considered

with respect to how it interacts with how accuracy is measured (recommendation 3). The nature of how memories are elicited and whether they involve direct/generative retrieval processes could impact instructions during the interview process (recommendation 2). Further understanding the way people understand viewpoint in a variety of media could inform the biases that may impact how people evaluate memory (recommendation 4). I hope that together this collection does indeed motivate the next 40 years of research as Talarico (2024) suggests it may.

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