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COMMENTARY

Looking Ahead With an Eye Toward Visual Perspective Use in Autobiographical Memory

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St. Jacques (2024) presents a thorough review of how visual perspective influences and is influenced by autobiographical memory content, phenomenology, and metacognitive components. Her review is impressive in scale, scope, and sophistication. Further, it should serve to inspire further work on the topic. This commentary adapts the tetrahedral model of research design (Talarico, 2023) to elucidate multiple productive areas of inquiry. Expansive research questions examining how individual differences, sensory and temporal characteristics of events, and cultural norms may influence the effects of visual perspective on autobiographical remembering are addressed. Special attention is paid to how critical analysis of visual media and contemporary technologies can inform psychological investigations.

Keywords: autobiographical memory, visual perspective, research design

St. Jacques (2024) presents a thorough review of the rich, complex phenomenon of visual perspective in autobiographical memory and how it can elucidate basic and applied questions of memory function. She has done a tremendous service for the field by covering 4 decades of work, including evidence from both behavioral and neuroscientific approaches. The review is divided between mnemonic phenomena that are naturalistically associated with the field (i.e., first-person) and observer (i.e., third-person) perspectives and then how those phenomena are influenced by deliberate shifts in perspective. Therefore, she presents a systematic structure for how investigators can examine how perspective influences and is influenced by basic autobiographical memory content, phenomenology, and metacognitive components. Throughout, she identifies areas where there is consensus (e.g., that increased emotional arousal is more strongly associated with observer perspectives) and those where there remain inconsistencies (e.g., how aging influences the likelihood of recalling memories from observer perspectives). The latter example illustrates her expansive framework, including a developmental perspective and a diversity of participant populations including individuals with psychopathological and neuropsychological conditions. Last, she includes an admirable focus on the applied forensic context for victim/witness testimony with regard to both solicitation of information via interrogation techniques and evaluation of memory reports by legal professionals and juries.

This forensic emphasis explains why memory accuracy is emphasized by St. Jacques (2024) throughout. She begins with an apt highlighting of how frequently individuals (both those who have a professional interest in memory and those who do not) conflate (re)construction[1] with inauthentic or inaccurate recall and ends with a cogent and comprehensive discussion of perspective's influence on memory accuracy and the implications therein for forensic contexts. The discussion of accuracy itself is admirably nuanced with attention to differences between "objective" evaluations via external evidence (including controlled laboratory studies of real and virtual events) and "subjective" perceptions of accuracy (also identified in the literature as recollective belief or confidence) by the self and by outside observers. St. Jacques cogently reveals the assumptions made about the relationship between perspective and accuracy. A claim that "if a memory is recalled from an observer perspective, then the memory is (re)constructed" does not, in fact, logically imply that "if a memory is (re)constructed, then it will be recalled from an observer perspective"; indeed, this is an invalid affirmation of the consequent. Instead, it is more reasonable to conclude that an observer perspective makes obvious at least one of the types of (re)construction incorporated in all of the mnemonic processing. Evidence of these (re)constructive processes is simply more or less available from other phenomenological and evidentiary sources.

If we understand all mnemonic processing to be active (as has been argued since at least Bartlett, 1932) and therefore (re)constructive, we cannot then conclude that accuracy is dependent on the quantitative degree or qualitative kind of such processing that is evident in recall. Evolutionarily, memory has to have evolved to be a sufficiently reliable representation of past events in order to provide survival benefits. It does not need to be (and in fact is unlikely to ever be) a complete and veridical representation of some

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[1] I will adopt this terminology throughout to encompass the active cognitive processes engaged at encoding (i.e., constructive) and during retrieval (i.e., reconstructive) when I mean to be agnostic as to the timing of their influence. Otherwise, I will defer to the temporally specific terms when they are more apt.

objective past truth. However, consistent repeated recall of an event by the same person over time, general agreement among multiple individuals who experienced and recalled the same event, and the confirmation from alternative evidentiary sources (when and where possible), all confirm the sufficiency of autobiographical memory accuracy without the negation of (re)constructive processing at encoding or retrieval.

St. Jacques (2024) also presents a thorough discussion of various forms of "inaccurate" recall, including counterfactual reasoning, imagined events (both past and future), vicarious memories of other peoples' lived experiences, and fabricated events. I particularly appreciated the inclusion of deliberately fabricated events as these are of particular relevance to the forensic context and are often underappreciated in other discussions of false memory. Elsewhere, she alludes to memories of events depicted in fiction, though I would have welcomed a more fine-grained analysis of memories for books, films, and video games (e.g., Yang et al., 2022) due to the substantive differences in the quantity and quality of visual information provided by each as well as the passive versus participatory dimension that distinguishes them.

One final compliment for St. Jacques's (2024) review is that it does what all good scientific writing does—not only answering interesting research questions but revealing questions that still remain. The remainder of this commentary will focus on those questions. I will humbly rely on the tetrahedral framework for autobiographical memory research design (Talarico, 2023, which is itself based on Jenkins, 1979) to do so.

The top vertex of the tetrahedral model represents participants—the population of interest for the research. St. Jacques (2024) raises many relevant questions in her discussion of individual differences. She describes how studies of individuals with posttraumatic stress disorder have enriched our understanding of the positive correlation between emotional arousal and observer perspectives. Studies of individuals with Korsakoff syndrome or other conditions that lead to confabulation would complement existing work on false memories, nonbelieved memories, and deliberate fabrications within inaccurate memory. As with psychopathology, disposition may systematically influence the interpretation of events in ways that result in predictable consequences for visual perspective. Socialization regarding gender roles and cultural expectations may similarly influence event internalization and expression. Cognitive abilities such as variance in object and spatial imagery could be further expanded to include individuals with aphantasia and agnosia as these have been associated with autobiographical memory impairment generally (e.g., severely deficient autobiographical memory, Palombo et al., 2015, and visual deficit amnesia, Rubin & Greenberg, 1998, respectively) but not associated with visual perspective specifically. At the other extreme end of variance in the quality of imagery might be individuals with synesthesia who could further our understanding of the relationship between visual perspective and vividness of imagery within vision and the other sense modalities.

To be fair, many of the individual differences identified above that influence the effects of visual perspective are characterized within the tetrahedral framework as event-person interactions rather than the main effects of population parameters. For example, if the dominant sense (or degree of multisensory involvement) can be thought of as a dimension of event type, then the experience of individuals with synesthesia is a person-level difference that interacts with sensory components of the event itself to result in perceptual variance that may (or may not) include perspective among those visual details. Although St. Jacques (2024) sensibly limits her review to studies of visual imagery, there are additional interesting questions to be asked of the relationship to nonvisual imageries. For example, are highly sensory experiences outside of vision (e.g., those involving music or food) similarly associated with increased field perspectives? Given that perspective itself is visual, one may not expect a strong correlation outside vision. However, given that vividness is a multimodal phenomenon, perhaps an observer perspective is associated with reduced imagery across sense modalities.

To-be-remembered events as a vertex of the tetrahedral model maps closely to St. Jacques's (2024) discussion of event types. As she rightly points out, it is higher order event characteristics (e.g., degree of self-involvement) that most reliably predict visual perspective. However, descriptive characteristics of events may also influence recall by way of visual representation norms. For example, sports tend to be visually presented (e.g., photographed, filmed, drawn, and animated) from prescriptive positions. Some are presented laterally (e.g., side to side along the width of a playing field), some vertically (e.g., from behind a goal down the length of a playing field), and some from overhead views. Therefore, one might expect these media conventions to influence views of the self both in terms of the availability of specific third-person perspectives for encoding and the ease of accessibility of such perspectives during retrieval.

Other variations of event type present additional avenues of investigation. As is typical in autobiographical memory research generally, St. Jacques's (2024) focus is predominantly on unique events lasting minutes to hours. Yet, given the role of perspective in theories about the (re)constructive nature of memory, examining memories for extended events (e.g., a multiday vacation or a confined period of illness) and schematic representations of repeated events (e.g., a ritual of completing the crossword puzzle in the Sunday newspaper or generic memories of reading bedtime stories to a child) would be an interesting test of the relationship among identifiable (re)constructive processes. Are these mechanisms additive in their effects on (perceptions of) accuracy? Continuing in terms of interaction effects, such extended or repeated event types might also expand our understanding of the relationship between perspective and vividness and other phenomenological characteristics of remembering.

Phenomenological characteristics like vividness are associated with the outcomes vertex in the tetrahedral model. These and other dependent variables assessed in autobiographical memory research are clearly associated with each of the properties St. Jacques (2024) discusses in relation to visual perspective. In the autobiographical memory literature, vividness often means either the specificity and perceptual clarity of the internal representation (as St. Jacques employs the term) or the quantity of detail (as she, and others, associate with accuracy). Vividness is also highly positively correlated with other phenomenological aspects of remembering, most consistently reliving (i.e., mental time travel, reminiscing, "remembering" [vs. knowing], or autonoetic consciousness; e.g., Rubin et al., 2003) and emotional arousal (e.g., van Schie et al., 2019), all of which then are negatively associated with observer perspectives. St. Jacques wisely emphasizes the difficulty of differentiating these constructs. However, more attention to the psychometrics of measurement might be useful. Differences between narrative and pictorial outputs are nicely summarized by St. Jacques.

Similar attention to differences between bipolar and unipolar scales for assessing field and observer perspectives would have been helpful. Further consideration of how those scales may be effectively translated across languages and to be accessible to populations with more limited vocabularies (e.g., children) would also be a valuable contribution.

Thinking about cross-linguistic manipulations (i.e., a three-way interaction among outcomes, context, and participants within the tetrahedral model) may be informative for studying the effects of retrieval instruction on visual perspective. For example, cultural and linguistic conventions (which St. Jacques, 2024, discusses as an individual differences dimension) may be particularly relevant here. The intentionally neutral instruction to "describe the experience" may lead to responses with vastly different emphasis as a result of broad cultural communication norms (e.g., Pan, 2008) as well as their interactions with expectations due to social roles, conversational modality (i.e., spoken vs. written), and other factors (e.g., Di Mare & Waldron, 2009; Giles et al., 1992).

The final vertex in the tetrahedral model is the context in which events are encoded and/or retrieved. Given the inclusion of both constructive and reconstructive processes that influence mnemonic perspectives in St. Jacques's (2024) review, there are several as-yet-unanswered questions to be investigated here. Cross-cultural comparisons would benefit from attending not just to known mnemonic differences among groups but also to differences in conventions for visual representation. There is an opportunity for rich collaboration between memory studies and media studies scholars to examine how changes to the visual vocabulary in photography and film can/have influenced the available representational forms for observer perspectives. For example, has the transition from rare overhead crane shots to more ubiquitous overhead drone shots influenced the ways in which individuals recreate overhead views in their minds' eye? Shifts in recall toward the perspective represented in a photograph suggest that cultural media conventions are similarly likely to influence recall. For example, Groo (2020) has argued that views taken from drone cameras "often [hew] quite closely to [the drone's] origins in military conflict, offering perspectives on scenes of human annihilation that are too dangerous for photographers to enter themselves" (p. 77), and therefore, this specific view is likely to be associated with images of destruction, decay, and desolation. Are then images in the mind's eye from a distant overhead perspective more likely to be associated with negative emotional valence than positive valence, as would be predicted from findings from traumatic memories (especially among individuals with posttraumatic stress disorder), as described by St. Jacques?

Related, examining the role of close-up versus midrange versus distant views could similarly add nuance to the discussion of how third-person perspectives can shape memory phenomenology and interpretation. Other techniques from media criticism can bring analytical depth to these questions. Do individuals report the imposition of media constraints on memory representations? For example, are dynamic shifts in perspective limited by how a camera might move physically through space, in ways analogous to Shepard and Metzler's (1971) revealed constraints on mental object rotation? Is the movement of the mind's eye detectable to individuals in the way that a camera movement might convey spinning or scanning with a fixed point of reference? Alternately, the visual vocabulary of the film may allow for "editorial cuts" from one perspective to another or jumps in time that may reflect cinematic conventions but not physical laws. Thinking more generally, does the availability of these filmic techniques over time correlate with age-related (i.e., cohort-related) changes in the frequency of specific third-person perspectives? Beyond strictly perceptual influences, do genre conventions of these forms correlate with the event types and/or dispositional characteristics that shape internal representations? For example, are camera angles common in horror films more similar to perspectives adopted for traumatic events or in phobic individuals?[2]

Recognizing that individuals not only consume visual media but are also likely to produce it (especially given the contemporary availability of camera utilities in one's smartphone and the popularity of image-based social media) also introduces productive avenues of research. For example, how does mirror inversion influence the mental image of self? Tying many of these threads together, one might ask how do cultural differences in visual conventions interact with cognitive differences in mnemonic, self-referential, and social relatedness to shape perspective in recall?

Another manipulable dimension of autobiographical memory research design is the time frame under investigation, represented in the tetrahedral model by the width of the pyramid. Most obviously in the current review, this is related to the remoteness of events. As succinctly summarized by St. Jacques (2024), memory recall shifts from field to observer with increasing remoteness of the event. Though she describes both cross-sectional and longitudinal studies of the effect, the specific temporal function remains unspecified. Is it Ebbinghaus (1885)? Are there deviations thereof (e.g., Rubin & Schulkind, 1997)? Is it relative delay between event occurrence and recall (e.g., half a lifetime ago) or the objective interval (e.g., 10 years ago for both 20-year-olds and 40-year-olds) that predicts the shift? Another possibility is that it is not objective recency versus remoteness but the relative sequence that might influence perspective. It would be interesting to hyperfocus on events from a single day via event sampling or via wearable camera "lifelogging" technology to examine the detailed retrieval of multiple events across that limited time frame. The wearable camera technique has the added benefit of allowing for recognition tests to compare with recall.

Turning again to participant interaction effects, individuals with highly superior autobiographical memory could elucidate the specific temporal pattern of the shift from field to observer memories from recent to remote events given the atypicality with which those individuals respond to date-specific cues (LePort et al., 2016). One may also ask how early in development is the delay-induced shift from field to observer perspectives observable? Adapting elicited imitation tasks to include different perspectives at encoding might reveal age-related differences in how effectively children can construct and reconstruct autobiographical memories.

Finally, the height of the tetrahedron illustrates the sample size under investigation. This is one dimension not explicitly addressed by St. Jacques (2024) despite her inclusion of a breadth of psychological and neuroscientific methodologies. Again, thinking

[2] Clearly, there are likely to be bidirectional influences here in terms of directorial and cinematographic choices influenced by the desire to represent personal experiences on screen. Given the memory focus here, I have de-emphasized those but would still encourage collaborative efforts by media studies and memory studies scholars to address these questions as well.

about productive collaborations with media studies or computer science colleagues, there are opportunities to use large-scale data from social media postings and other naturalistic autobiographical outputs (both textual and visual) to determine how event perspective is naturalistically reported (e.g., as a function of temporality or event type).

In sum, I am struck by how many as-yet-unanswered questions remain about the construct of visual perspective as well as its relationship to other autobiographical memory dimensions that were revealed by this comprehensive and compelling review. St. Jacques (2024) is likely to have motivated at least another 40 years of work on this interesting and important topic.

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