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## **Are observer memories (accurate) memories? Insights from experimental philosophy**

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**Title:** Are observer memories (accurate) memories? Insights from experimental philosophy

**Abstract:** A striking feature of our memories of the personal past is that they involve different visual perspectives: one sometimes recalls past events from one's original point of view (a field perspective), but one sometimes recalls them from an external point of view (an observer perspective). In philosophy, observer memories are often seen as being less than fully genuine and as being necessarily false or distorted. This paper looks at whether laypeople share the standard philosophical view by applying the methods of experimental philosophy. We report the results of five studies suggesting that, while participants clearly categorize both field and observer memories as memories, they tend to judge that observer memories are slightly less accurate than field memories. Our results suggest, however, that in lay thought, the difference between field and observer memories is not nearly as clear-cut as philosophers have generally taken it to be.

**Highlights:**

- The folk concept of memory does not preclude observer memory
- Observer memory tends to be perceived as slightly less accurate than field memory
- Philosophical theories overstate the difference between field and observer memory
- Subjects' own dominant perspective for recall does not impact ascriptions of accuracy in remembering
- No differences in ascriptions of accuracy were observed between memories of recent and distant events

**Keywords:** observer memory; perspective in memory; accuracy in memory; memory distortion; experimental philosophy

**Introduction**

We remember all manner of events, from the mundane to the meaningful, from the exceptional to the everyday. A striking feature of our memories of the personal past—autobiographical memories—is that they involve different visual perspectives. Often, we remember events from the points of view that we occupied when we first experienced them—we have *field* memories. But sometimes we remember them from points of view that we did not occupy when we first experience them and thus see ourselves in the remembered scene—we have *observer* memories.

The study of perspective in memory, like psychology itself, has a long past but a short history.<sup>1</sup> Psychologists, including Francis Galton (1883/1907), Victor and Catherine Henri (Nicolas et al. 2013), and Sigmund Freud (1899/2001), had already noted this feature of memory in the nineteenth century. But it was not until the late twentieth century that Nigro and Neisser (1983) conducted the first systematic study of perspective in memory, introducing the terms “field memory” and “observer memory” into the literature and laying the foundations for a rich and robust line of empirical research. This research has shown that field memories are more common overall and that a field perspective tends to be adopted when the remembered event involved a high degree of emotion (Robinson & Swanson 1993). It has also shown, however, that observer memories are more common under certain circumstances. They are, for example, more common in memory for temporally remote events, such as the events of one’s childhood (Nigro & Neisser 1983), and events that involve a high degree of self-awareness, such as giving a public talk, likewise tend to be recalled from an observer perspective (Rice 2010).<sup>2</sup>

Picking up on Freud’s remarks on “working over” in memory, one of Nigro and Neisser’s key proposals was that observer memories necessarily diverge from the corresponding experiences and thus are more likely than field memories to be the products of reconstructive remembering. The idea that observer remembering involves more extensive reconstruction than does field remembering has guided most subsequent thinking on perspective in memory, with observer memories being seen by both psychologists and

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<sup>1</sup> We borrow the phrase from Ebbinghaus (1908); see also Danziger (2013) and, in the context of visual perspective in memory, Eich et al. (2011).

<sup>2</sup> There is important heterogeneity within the category of autobiographical memory. For example, voluntary memories must be distinguished from involuntary memories (Berntsen 1996; Barzykowski & Staugaard 2016, 2018; Schlagman & Kvavilashvili 2008), and, within the category of voluntary memories, memories that are directly recalled must be distinguished from memories that are generatively recalled (e.g., Barzykowski & Staugaard 2016; Harris, O’Connor, & Sutton 2015; Uzer, Lee, & Brown 2012). These types of memory may differ with respect to perspective, in particular, involuntary memories and direct voluntary memories appear to be more field-oriented, whereas generative voluntary memories are more observer-oriented (e.g., Barzykowski, Niedźwieńska, & Mazzoni 2019).

philosophers as less accurate than field memories.<sup>3</sup> Psychologists and philosophers nevertheless tend to ask different questions about accuracy in observer memory. Psychologists are typically more interested in the question whether, as a matter of fact, observer memories are more likely than field memories to be false. Philosophers, in contrast, are typically interested in the question whether there can *in principle* be genuine memories in which one adopts an observer perspective. But researchers in both disciplines tend to take the default view to be that observer memories are in some sense defective (see Sutton 2010; Michaelian 2016; McCarroll 2018).

In psychology, there is some empirical evidence that shifting from field perspective to observer perspective tends to reduce the accuracy of subsequent recall (Marcotti & St. Jacques 2018). Overall, however, the evidence regarding the likelihood of inaccuracy in observer memory is inconclusive. Mace et al. (2001), Porter et al. (1999), and McIsaac and Eich (2002) found no differences in accuracy for observer vs. field memories. In contrast, Kim et al. (1999) found field memories to be more accurate, while Heaps and Nash found that “imagery in false memories was most often viewed from the observer perspective” (2001: 920). Thus, the British Psychological Society concluded, in a report on legal guidelines on memory, that an “image experienced from a field perspective should not be assumed to be a more accurate recollection than an image experienced from an observer perspective” (2008: 20). Despite this cautionary note, observer memories are typically considered by psychologists to involve a greater degree of reconstruction than field memories.<sup>4</sup>

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<sup>3</sup> It is not in fact clear that observer memories necessarily diverge from the corresponding experiences. Nigro and Neisser suggested that one sometimes adopts a detached perspective during experience and hence that the perspective at issue in an observer memory may, in some cases, not diverge from the perspective that one had during the corresponding experience. See McCarroll 2018 for a detailed discussion of the possibility of observer perspective experience.

<sup>4</sup> As noted above, observer perspectives tend to be more common for voluntary and generatively retrieved memories, forms of memory that may involve more reconstruction. See, for example, Harris, O’Connor, & Sutton 2015 for a discussion of whether direct and generatively recalled memories differ in terms of reconstructive processes.

In philosophy, the claim is sometimes made that observer memories are simply impossible (Vendler 1979; Wollheim 1984)—that is, that no genuine memory is an observer memory. The basic argument for this claim takes the form of an appeal to the intuition that genuine memory preserves the content of perception, combined with the claim that it is (setting aside cases involving mirrors and the like) simply impossible for one to see oneself “from the outside” during a perceptual experience. Even philosophers who base their arguments on empirical evidence rather than intuition often voice scepticism regarding observer memories. While they sometimes grant that observer memories may be genuine memories, they nevertheless tend to take them inevitably to involve some degree of distortion (De Brigard 2014; Fernández 2015). The thought is, again, that the content of an observer memory necessarily diverges from the content of the corresponding perceptual experience. Overall, the dominant view in philosophy is that observer memories are either impossible or necessarily distorted.

The research that we present here is concerned not with the merits of this view but rather with whether the view is shared by laypeople.<sup>5</sup> There is little previous work on this question. A study on beliefs about memory among laypeople in the US found that 63% of those surveyed agreed that “human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later”, and almost half thought that memories, once formed, are permanent and do not change (Simons & Chabris 2011: 5; see also Magnussen et al. 2006.). But we are unaware of any work on what laypeople think about observer memories in particular. Are they willing to grant that observer memories are “memories”, or do they reserve that term for field memories? Do they think that observer memories are more distorted, or less accurate, than field memories? Do

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<sup>5</sup> The term ‘laypeople’ comes with an important caveat. The population we tested here are entirely people from WEIRD cultural contexts (Henrich, Heine, and Norenzayan 2010) and not all of humanity. When we refer to laypeople or the view from folk psychology in this paper, it should be understood as referring to this narrow population. See also the Limitations and Future Research section below.

ascriptions of accuracy depend on features of the event in question, such as the age of the memory or the type of event being recalled? Given that there are individual (and cultural) differences (Cohen & Gunz 2002; Radvansky & Svob 2019) in the adoption of visual perspectives in personal memory, are subjects who themselves typically recall from an observer perspective more inclined to rate observer memories as accurate?

Our aim in this paper is to answer these questions, thereby taking a step towards understanding the role that perspective plays in lay thought about memory and its accuracy. Employing the methodology of *experimental philosophy*, based on third-person descriptions of instances of remembering, we tested participants' intuitions about remembering, rather than asking them about their own memories and whether they believe them to be accurate/distorted. This enabled us to test subjects' intuitions about the concept of memory in general, rather than their intuitions about their own memories.<sup>6</sup> Our research hence goes beyond existing work, providing a fresh empirical perspective on observer memory.

The paper presents five studies. In Study 1, we tested whether participants treat visualization of a past event from an observer perspective as remembering. We also checked whether the recency of the visualized past event—whether the event is part of the recent or more distant past—makes a difference to attributions of remembering.<sup>7</sup> In the four remaining studies (Studies 2-5), we asked whether participants are inclined to treat observer memories as less accurate and more distorted than field memories.

To the best of our knowledge, this is the first paper to apply the methods of experimental philosophy in order to determine whether the folk concept of episodic memory

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<sup>6</sup> It is partly for this reason that we do not distinguish between types of memory (e.g., voluntary, involuntary) within the class of autobiographical memory, where these distinct forms may not be captured in laypeople's understanding of memory. See Limitations and Future Research section below.

<sup>7</sup> See also work on construal level theory (CLT). According to CLT, events can be thought about, represented, and understood either more abstractly (high-level construals) or in terms of more concrete detail (low-level construals) (Trope & Liberman 2003). High-level construals are thought to involve psychological distance, in the sense that the event thought about is more removed from the reference point of the self in the here and now involved in the immediate experience. Observer perspectives are thought to be one way of representing an event as a high-level construal (Trope & Liberman 2010: 448). See McCarroll (2019) and McCarroll & Cosentino (2020) for a discussion of CLT and observer memory.

is compatible with the possibility of (accurate) observer memory. Despite the novelty of the approach, we obtained a number of clear results, results that are unexpected given the overall thrust of the philosophical literature. Interestingly, the folk concept of memory does not preclude observer perspectives. Moreover, though observer memories tend to be perceived as slightly less accurate than field memories, this effect is neither large nor reliable. Overall, our data suggest that the differences between field and observer perspectives in the folk concept of memory are not as marked as in much philosophical theorizing.

### **Study 1: Are observer perspective memories memories?**

In Study 1, we tested whether participants are less inclined to treat visualization of a past event from an observer perspective as remembering compared to visualization of a past event from a field perspective. We also checked whether the recency of the visualized past event makes a difference to attributions of remembering.

*Participants.* 281 participants were recruited on Prolific.ac to take part in this online study for monetary compensation (63% identified as females, 35% identified as males, 2% identified as non-binary.  $M_{\text{age}} = 36.0$ ; age SD = 13.3; age range 18-69). Here, as in the following studies, participants were US or UK nationals who indicated English as their first language.

*Materials and methods.* Each participant received one out of four vignettes in a two-by-two between-subjects design: 2 Perspective (Field versus Observer)  $\times$  2 Recency (Recent versus Distant). The field perspective probe read (differences between recent and distant in brackets):

Like many people, public speaking makes John nervous. [Two months / Twenty years] ago, John gave a public lecture to several hundred people. Today, he visualizes the event. He sees, as if from his position on stage, the audience filling the seats all the way to the back of the auditorium. Fortunately, the lecture went well.

The observer perspective probe read (differences in brackets):

Like many people, public speaking makes John nervous. [Two months / Twenty years] ago, John gave a public lecture to a large group of people. Today, he visualizes the event. He sees, as if from a seat in the back row, himself on stage down at the front of the auditorium. Fortunately, the lecture went well.

After reading the vignette, on the same page, participants were asked: “To what extent do you agree or disagree with the following claim: ‘John remembers giving the lecture’?”, with answer options anchored at 1 (Completely disagree) and 7 (Completely agree).

Participants were also asked to evaluate the likelihood of visualizing the past event in the relevant way. The likelihood probe “How likely do you think it is that John would visualize his lecture from this perspective?” was anchored at 1 (Very unlikely) and 7 (Very likely). The reason for including this probe was to check whether differences in likelihood ratings could potentially explain differences in attributions of remembering. Since no differences in ascriptions of remembering were observed, however, we do not report or discuss these results.

On the following page, participants were asked to answer one more question about remembering, that was—following a procedure described in Dranseika (2020)—designed to block protagonist projection:<sup>8</sup>

Which of the following two descriptions is a better description of John’s situation:

- a) “John remembers giving the lecture.”

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<sup>8</sup> Protagonist projection occurs when study participants respond to a given study probe not from their own perspective but attempt to imagine what would seem true from the protagonist’s point of view (Holton 1997). The current wording is aimed at blocking the most worrying form of protagonist projection, in which the participant would deny the ascription of remembering from his own perspective but agrees with the ascription due to protagonist projection. A similar strategy is widely used in experimental epistemology to block protagonist projection in knowledge attributions; e.g., ‘Bob knows the bank will be open on Saturday’ vs. ‘Bob thinks he knows the bank will be open on Saturday, but he doesn’t actually know it will be open’ (Nagel et al. 2013; Machery et al. 2017; Rose et al. 2019).

- b) “John thinks that he remembers giving the lecture, but John does not remember giving the lecture.”

*Results.* The results of Study 1 are provided in Figure 1a-b.

[Figure 1 about here.]

*Remembering (Likert scale):* Ascriptions of remembering were analyzed with a 2 (Perspective: Field versus Observer)  $\times$  2 (Recency: Recent versus Distant) between-subjects ANOVA. There were no main effects of either of the two factors (*Perspective*:  $F(1, 277) = .104, p = .747, \eta^2 = .000$ ; *Recency*:  $F(1, 277) = .757, p = .385, \eta^2 = .003$ ); neither was there a significant interaction between the two ( $F(1, 277) = .004, p = .952, \eta^2 = .000$ ), indicating that neither perspective of visualisation nor recency had an effect on ascriptions of remembering.

Comparisons against the middle of the scale (4) suggest that study participants strongly agreed with ascriptions of remembering for both field ( $M = 5.80, SD = 1.36, t(141) = 50.7, p < .001$ ) and observer visualisations of past events ( $M = 5.76, SD = 1.38, t(138) = 49.3, p < .001$ ), with no difference between the perspectives,  $t(279) = .29, p = .772$ .

*Remembering (Dichotomous scale):* A chi-square test of independence showed that there was no significant association between conditions and ascriptions of remembering,  $X^2(3, N = 281) = 1.19, p = .756$ . Across conditions, the vast majority of participants (81%) chose to ascribe remembering. No difference was observed in frequency of ascriptions of remembering between field (82%) and observer (79%) perspective visualisations,  $X^2(1, N =$

281) = 0.48,  $p = .488$ . For both perspectives, binomial tests suggest that remembering is ascribed more frequently than could be expected by chance alone (both  $ps < .001$ ).<sup>9</sup>

*Follow-up Study 1\**. Reacting to a worry voiced by one of the reviewers that our perspective manipulation may be too subtle and participants may fail to realize that visualisation was performed from an observer perspective, we decided to run a short study to see if we can rule out this worry. In order to do this, we presented one of the vignettes used in Study 1 (Observer perspective, Recent) to a new sample of participants ( $N = 60$ , 73% identified as females, 27% identified as males.  $M_{\text{age}} = 30.7$ ; age SD = 13.8; age range 18-74). This time, however, immediately after the vignette, we also included a manipulation check of the following form (with response options presented in randomized order), inspired by descriptions of perspectives used in studies by Rice & Rubin (2009) and Radvansky & Svob (2019):

Most people visualize past events in one of two ways. One way that people visualize an event is as if through their own eyes, from roughly the same viewpoint that it was experienced. Another way that people visualize an event is as if from an external vantage point, where the visualized scene contains an image of themselves.

Which of these two ways of visualizing was described in the story?

- (a) John visualized giving a public lecture as if through his own eyes.
- (b) John visualized giving a public lecture as if from an external vantage point.

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<sup>9</sup> One worry regarding the present binary choice question that contrasts ascriptions of remembering with ascriptions of thinking that one is remembering is that the current response options do not cover all possibilities. In particular, participants are not given an option to deny both ascriptions at the same time: “John does not think that he remembers giving the lecture *and* John does not remember giving the lecture.” This omission, however, is not particularly worrying in the present case since ascriptions of remembering on the Likert scale were very high, so that, even if there was a potential ambiguity between these two ascriptions in the Likert format question, it is unlikely that there would be many participants willing to deny both ascriptions at the same time after explicit disambiguation.

85% of study participants correctly answered the manipulation check question, indicating that they correctly inferred this to be a case of observer perspective.

The results of Study 1\* are provided in Figure 1c-d. Looking only at those participants who indicated that John visualized giving a public lecture as if from an external vantage point ( $n = 51$ ), they ascribed remembering to John both on a Likert scale ( $M = 5.76$ ,  $SD = 1.32$ ,  $t(50) = 9.54$ ,  $p < .001$ ) and in a dichotomous choice option (84%, binomial test,  $p < .001$ ). These results are very similar to those of Study 1.

*Discussion.* The main result of Study 1 is that participants were willing to agree that visualization of past personal events—both recent and distant—from an observer perspective constitutes remembering. This result stayed robust even with a dichotomous probe aimed at removing protagonist projection. Study 1 suggests that neither perspective nor recency of the visualized past event makes a difference to ascriptions of remembering. Study 1\* additionally helps to dispel a worry that these results might be due to study participants not noticing that the visualization was specifically from an observer perspective.

Having established that study participants were willing to describe visualization of past events from an observer perspective to be clear cases of remembering, in the following four studies we looked at whether there are differences in ascriptions of accuracy and distortedness between observer perspective memories and field perspective memories.

## **Study 2: Ascriptions of accuracy**

*Participants.* 221 participants were recruited on Prolific.ac to take part in this online study (68% identified as females, 31% identified as males, 1% identified as non-binary.  $M_{\text{age}} = 37.5$ ; age  $SD = 12.5$ ; age range 18-79). All participants answered an attention check question (see below) correctly.

*Materials and methods.* Each participant received one out of two vignettes differing in perspective (Field versus Observer). The field perspective vignette read:

Like many people, public speaking makes John nervous. Two years ago, John gave a public lecture to several hundred people. Today, he remembers the event. He sees, as if from his position on stage, the audience filling the seats all the way to the back of the auditorium. Fortunately, the lecture went well.

The observer perspective vignette read:

Like many people, public speaking makes John nervous. Two years ago, John gave a public lecture to a large group of people. Today, he remembers the event. He sees, as if from a seat in the back row, himself on stage down at the front of the auditorium. Fortunately, the lecture went well.

After reading the vignette, participants were asked to evaluate the accuracy and distortedness of John's memory. The question about accuracy read "To what extent do you agree or disagree with the following claim: 'John accurately remembers giving the lecture'?". The question about distortedness read: "To what extent do you agree or disagree with the following claim: 'John has a distorted memory of giving the lecture'?". Both questions had answer options anchored at 1 (Completely disagree) and 7 (Completely agree). Participants were also given an attention check, which read: "According to the story, which of the following statements is correct?". The attention check had two answer options: "John gave a lecture two years ago" and "John gave a lecture twenty years ago". All participants answered this question correctly.

*Results.* In designing our studies, we hypothesized that accuracy and distortedness could be treated as two sides of the same coin: if a type of memory is treated as less accurate, it should be treated as more distorted, and vice versa. This was borne out by the studies: the internal consistency of these two measures (after inverting the distortedness scale) was

acceptable in Studies 2, 3 and 5 (Cronbach's alpha was, respectively, .72, .78, and .66) and good in Study 4 (Cronbach's alpha was .82). Thus, in presenting results of studies 2-5 we calculate a composite accuracy/undistortedness score by averaging across the two scales: accuracy and (inverted) distortedness. For the sake of simplicity, in the rest of the paper we refer to this accuracy/undistortedness score simply as "accuracy".

The results of Study 2 are provided in Figure 2(a). Independent sample t-tests showed no statistically significant difference between perspectives in ascriptions of accuracy ( $M_{field} = 5.06$ ,  $SD = 1.35$ ,  $M_{observer} = 4.73$ ,  $SD = 1.50$ ,  $t(219) = 1.73$ ,  $p = .085$ ,  $d = .23$ ).

[Figure 2 about here.]

*Discussion.* In the present study, no statistically significant difference was observed in accuracy judgments between field and observer perspective memories. We further examined this issue in the next three studies.

### **Study 3: Ascriptions of accuracy and temporal distance**

In Study 3, we looked further into the potential effect of perspective on ascriptions of accuracy and also looked at whether this effect depends on the recency of the remembered event.

*Participants.* 402 participants were recruited on Prolific.ac to take part in this online study (51% identified as females, 47% identified as males, 1% identified as non-binary, 1% did not indicate gender.  $M_{age} = 34.8$ ; age  $SD = 12.9$ ; age range 18-75, 3 participants did not indicate their age).

*Materials and methods.* Each participant received one out of four vignettes in a two-by-two between-subjects design: 2 (Perspective: Field versus Observer)  $\times$  2 (Recency: Recent versus Distant). The field perspective vignette read (differences in brackets):

[Two months / Twenty years] ago, John took a walk on an empty beach. Today, he remembers the event. He sees, as if from his position on the beach next to the water, the boats out at sea in front of him. It was a lovely day out.

The observer perspective vignette read (differences in brackets):

[Two months / Twenty years] ago, John took a walk on an empty beach. Today, he remembers the event. He sees, as if from the hill overlooking the beach, himself on the beach next to the water looking at the boats out at sea in front of him. It was a lovely day out.

After reading the vignette, participants were asked to evaluate accuracy and distortedness of John's memory, as in Study 2, with both questions in random order and with answer options anchored at 1 (Completely disagree) and 7 (Completely agree) (differences in brackets):

To what extent do you agree or disagree with the following claim: "John [accurately remembers / has a distorted memory of] walking on the beach"?

*Results.* The results of Study 3 are displayed in Figure 2b. The data were analyzed with a 2 (Perspective: Field versus Observer)  $\times$  2 (Recency: Recent versus Distant) between-subjects ANOVA. The main effect of perspective on accuracy ratings was significant,  $F(1, 398) = 4.34, p = .038, \eta^2 = .011$ . There was no main effect of recency on accuracy ratings,  $F(1, 398) = 2.10, p = .148, \eta^2 = .005$ . There was no interaction between the two factors,  $F(1, 398) = .343, p = .559, \eta^2 = .001$ . In general, field memories were perceived to be more accurate than observer memories ( $M_{field} = 5.07, SD = 1.47, M_{observer} = 4.74, SD = 1.52, p = .026, d = .22$ ).

*Discussion.* In Study 3, field memories were perceived to be more accurate than observer memories. Concerning recency, no differences between memories of recent and distant events in ascriptions of accuracy were observed. This is in line with Study 1, where recency had no impact on ascriptions of remembering.

#### **Study 4: Ascriptions of accuracy and dominant perspectives**

In Study 4, we looked further into the effect of perspective on accuracy in a broader set of vignettes<sup>10</sup> as well as whether ascriptions of accuracy will depend on the dominant perspective from which participants (believe that they) remember.

*Participants.* 444 participants were recruited on Prolific.ac to take part in this online study (66% identified as females, 33% identified as males, 1% identified as non-binary.  $M_{\text{age}} = 35.1$ ; age SD = 11.7; age range 18-75).

*Materials and methods.* Each participant received one out of four vignettes in a two-by-two between-subjects design: 2 (Perspective: Field versus Observer)  $\times$  2 (Scenario: Post office versus Car crash). The Field perspective version of car crash vignette read:

Two months ago, John was in a horrible car accident. Today, he remembers the event. He sees, as if from his position behind the wheel, the trees at the side of the road, as his car spins out of control. Fortunately, he wasn't badly injured in the accident.

The Observer, Car crash vignette read:

Two months ago, John was in a horrible car accident. Today, he remembers the event. He sees, as if from side of the road, himself in the vehicle, as his car spins out of control. Fortunately, he wasn't badly injured in the accident.

The Field, Post office read:

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<sup>10</sup> Initially, we intended to use the vignettes presented in this study to look into whether the nature of the remembered event—whether it is of high or low emotional intensity—will impact assessments of accuracy. However, we are no longer confident that our particular choice of vignettes is suitable for this purpose, since they differ in more ways than only emotional intensity. We thank the reviewers for this journal for pressing us on this issue. We return to the issue of emotional intensity in Study 5.

Two months ago, John was driving to pick up a parcel from the post office. Today, he remembers the event. He sees, as if from his position behind the wheel, the large sign for the post office as he arrives. Fortunately, there was space to park his car outside the building.

The Observer, Post office read:

Two months ago, John was driving to pick up a parcel from the post office. Today, he remembers the event. He sees, as if from the side of the road, himself in the vehicle.

Fortunately, there was space to park his car outside the building.

After reading the vignette, participants were asked to evaluate the accuracy and distortedness of John's memory, as in Studies 2 and 3, with both questions in random order and with answer options anchored at 1 (Completely disagree) and 7 (Completely agree) (differences in brackets):

To what extent do you agree or disagree with the following claim: "John [accurately remembers / has a distorted memory of] [being in a car accident / driving to the post office]"?

On the next page, we presented, for exploratory purposes, a task intended to measure participants' dominant perspective in episodic recall, modified from Rice & Rubin (2009) and Radvansky & Svob (2019):

When remembering an event from their lives, most people imagine the scene in one of two ways. One way that people remember an event is through their own eyes, from roughly the same viewpoint that it was originally experienced. Another way that people remember an event is as an outside observer, or onlooker, looking at the situation from an external vantage point, where the person remembering can see him or herself in the memory. When remembering events from your life, do you see them through your own eyes or as an outside observer?

Participants were given a chance to choose from the following five options: “Only out of my own eyes”; “Mostly out of my own eyes”; “Equally frequently out of my own eyes and as an outside observer”; “Mostly as an outside observer”; and “Only as an outside observer”.

*Results.* The results of Study 4 are displayed in Figure 2(c-e).

*Accuracy.* The data were analyzed with a 2 (Perspective: Field versus Observer)  $\times$  2 (Scenario: Post office versus Car crash) between-subjects ANOVA. The main effect of perspective on accuracy ratings was significant,  $F(1, 440) = 48.30, p < .001, \eta^2 = .095$ . The main effect of scenario on accuracy ratings was also significant,  $F(1, 440) = 18.36, p < .001, \eta^2 = .036$ . There was no significant interaction between the two factors,  $F(1, 440) = .178, p = .673, \eta^2 = .000$ .

Post hoc tests show that field memories were perceived to be more accurate than observer memories ( $t(442) = 7.10, p < .001, d = .67$ ). The same pattern of results emerged in each of the two scenarios taken separately: post office:  $M_{field} = 5.36, SD = 1.36, M_{observer} = 4.49, SD = 1.39, t(225) = 4.76, p < .001, d = .63$ , car crash:  $M_{field} = 4.85, SD = 1.44, M_{observer} = 3.86, SD = 1.42, t(215) = 5.06, p < .001, d = .69$ .

Overall, memories of a car crash were perceived to be less accurate than memories of driving to a post office ( $t(442) = 4.51, p < .001, d = .43$ ). We do not have a good explanation of this effect.

*Dominant perspectives.* Most of the participants reported that they remember mostly from field perspective (49%) or only from field perspective (25%). 13% of participants indicated that they remember equally frequently from both perspectives and further 12% indicated that they mostly remember from the observer perspective. Only 1 participant indicated that they remember only from the observer perspective. For the purposes of statistical analysis, the data on dominant perspectives were treated as ordinal data and 0 “Equally frequently out of my own eyes and as an outside observer” is treated as the middle-

point of this ordinal scale. One-sample Wilcoxon signed rank test showed that participants thought that they more frequently remember from field perspective than from observer perspective,  $W = 7865$ ,  $p < .001$ , with both median and modal response being -1 “mostly out of my own eyes”. Accuracy judgments correlate with reported dominant perspectives neither in general nor separately for field or observer memories (Spearman’s rank correlation, all  $ps \geq .17$ ).

*Discussion.* Concerning perspective, this study paints a similar picture to Study 3. Field memories once again were perceived to be more accurate than observer memories. This pattern emerged for both types of scenarios: post office and car crash. As expected, participants tended to report that they remember mostly or only from a field perspective.<sup>11</sup> However, (believed) dominant perspectives had no influence on accuracy judgments.

### **Study 5: Ascriptions of accuracy and emotional intensity**

In Study 5, we looked further into the effect of perspective on accuracy as well as whether the nature of the remembered event—whether it is of high or low emotional intensity—will impact assessments of accuracy. We wanted to have as simple a manipulation of emotional intensity as we could, so we decided to explicitly say in the vignette whether the protagonist was calm or terrified in the described situation.

*Participants.* 404 participants were recruited on Prolific.ac to take part in this online study (60% identified as females, 38% identified as males, 1% identified as non-binary and 1 participant did not provide a response.  $M_{age} = 31.5$ ; age SD = 12.8; age range 18-74).

*Materials and methods.* Each participant received one out of four vignettes in a two-by-two between-subjects design: 2 (Perspective: Field versus Observer)  $\times$  2 (Emotional intensity: Low versus High). They all used the same basic scenario from Study 4 (differences between conditions are provided in brackets):

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<sup>11</sup> See, for example, Nigro and Neisser (1983) and Robinson and Swanson (1993) on the prevalence of field perspective, but see Rice and Rubin (2011) for a higher occurrence of observer memory.

Two months ago, John was in a car accident. [He was terrified / He was calm] during the accident. Today, he remembers the event. He sees, [as if from his position behind the wheel, the trees at the side of the road / as if from side of the road, himself in the vehicle], as his car spins out of control. Fortunately, he wasn't injured in the accident.

The vignette was followed by two manipulation checks. The manipulation check for perspective was the same as in Study 1\*, except that 'visualize(d)' was changed to 'remember(ed)'. For the emotional intensity manipulation check, study participants were asked 'How emotionally arousing was the car accident to John?' on a scale from 1 (Not at all) to 7 (Very much).

After reading the vignette and responding to the manipulation checks, participants were asked to evaluate the accuracy and distortedness of John's memory, as in Studies 2-4, with both questions in random order and with answer options anchored at 1 (Completely disagree) and 7 (Completely agree) (differences in brackets):

To what extent do you agree or disagree with the following claim: "John [accurately remembers / has a distorted memory of] being in a car accident"?

*Results.* 6% of participants did not respond to the manipulation check for perspective in an intended way and thus were excluded from the study, resulting in  $n = 379$ . Emotional intensity manipulation check suggests that manipulation of emotional intensity was highly effective,  $M_{low} = 3.21$ ,  $SD = 1.72$ ,  $M_{high} = 5.87$ ,  $SD = 1.48$ ,  $t(377) = 16.1$ ,  $p < .001$ ,  $d = 1.66$ .

The results of Study 5 are displayed in Figure 2(f-g).

*Accuracy.* The data were analyzed with a 2 (Perspective: Field versus Observer)  $\times$  2 (Emotional intensity: Low versus High) between-subjects ANOVA. The main effect of perspective on accuracy ratings was significant,  $F(1, 375) = 32.09$ ,  $p < .001$ ,  $\eta^2 = .079$ . There

was no significant main effect of emotional intensity on accuracy ratings,  $F(1, 375) = 3.53, p = .061, \eta^2 = .009$ . However, analysis suggested that there was a statistically significant interaction between the two factors,  $F(1, 375) = 5.23, p = .023, \eta^2 = .014$ . Post hoc tests show that field perspective memories were perceived to be more accurate than observer perspective memories for both low emotional intensity events,  $M_{field} = 5.19, SD = 1.09, M_{observer} = 4.15, SD = 1.41, t(185) = 5.63, p < .001, d = .82$ , and high emotional intensity events,  $M_{field} = 5.14, SD = 1.26, M_{observer} = 4.69, SD = 1.32, t(190) = 2.39, p = .018, d = .35$ .

As for the effect of emotional intensity on ascriptions of accuracy, emotional intensity had no effect on ascriptions of accuracy for events remembered from field perspective,  $M_{low} = 5.19, SD = 1.09, M_{high} = 5.14, SD = 1.26, t(183) = .31, p = .756, d = .05$ , but for events remembered from the observer perspective, memories of high emotional intensity events were perceived to be somewhat more accurate than memories of low emotional intensity events,  $M_{low} = 4.15, SD = 1.41, M_{high} = 4.69, SD = 1.32, t(192) = 2.79, p = .006, d = .40$ .

*Discussion.* Concerning perspective, this study paints a similar picture to Studies 3 and 4. Field memories once again were perceived to be more accurate than observer memories. This pattern emerged both for memories of low and of high emotional intensity events.

### **General discussion**

Both philosophers and psychologists, we noted in the introduction, often tend to take the default view to be that observer memories are in some sense defective. What do the studies presented above tell us about the extent to which laypeople share this view? Do laypeople think that observer memories are “memories”? Do they think that they can be accurate?

The answer to the first question is fairly clear; the answer to the second question is somewhat less so. Regarding the first question, the participants in Study 1 categorized visualization of past events from both field and observer perspectives as clear cases of

remembering. On the other hand, while no statistically significant difference was observed in accuracy judgements between field and observer memories in Study 2, observer perspective memories were perceived to be less accurate in Studies 3, 4 and 5. While no statistically significant difference was observed in Study 2, there was a suggestive trend in the data in the same direction ( $p = .085$ ,  $d = .23$ ). Overall, then, our data suggest that observer memories tend to be seen as less accurate than field memories, but the effect is less pronounced (across vignette pairs, Cohen's  $d$  ranges from .22 to .82) than one would expect in the light of dominant views in philosophy.

Our study 4 also suggests that ascriptions of accuracy are not related to self-reported dominant perspective, the perspective from which participants think they usually visualize events when remembering. This result, we note, points to an important advantage of our decision to employ the methodology of experimental philosophy. By relying on vignettes describing different types of situations involved in episodic recall, we were able to test participants' intuitions about remembering based on third-person descriptions of remembering, rather than by asking subjects about their own memories and whether they think that they are accurate. This enabled us to test their intuitions about the concept of memory in general, rather than their intuitions about their own memories.

Our studies suggest, finally, that recency of the remembered event makes no difference to ascriptions either of remembering or of accuracy, both in general or in interaction with perspective. The psychological literature on perspective in remembering has shown that older memories are more likely to be recalled from an observer perspective (see Rice 2010). Because of this association of observer memory with older memories, we predicted that recency would have an impact on ascriptions of accuracy for observer memories (Study 3) as well as on the categorization of visualization of past episodes as cases of remembering (Study 1). We found no effect of temporal distance in Study 1. One possible

confound was the type of event in question: in Study 1, the event regarding which we were asking subjects to make ascriptions of remembering was one that involved a high degree of self-awareness (giving a public talk). If this type of event has an impact on ratings of observer perspectives, this may have an effect on the (potential) for temporal distance to have an impact on ratings of observer memories. Such an alternative explanation, however, would not be applicable to Study 3, in which we described an event that was as neutral as possible regarding the features typically associated with perspectives in memory. Even when controlling for the type of event, we found no significant effect of temporal distance on ascriptions of accuracy for memories.

The fact that our data on observer memory and temporal distance appear to be in tension with extant evidence from psychology is interesting but unproblematic. As we noted above, the evidence from psychology and the evidence presented here bear on distinct issues. On the one hand, psychological studies have looked, for example, at whether observer memories are *in fact* more common for older memories. On the other hand, our study looks at whether temporal distance affects the willingness of laypeople to treat observer memories as memories. In contrast to previous research focussed on *memory itself*, the goal of our research is to investigate lay *intuitions* about memory. Given the psychological evidence linking observer perspective to older memories, one possible explanation of the fact that there is no effect of temporal distance on the judgements in our study is that the way that people think about perspective in remembering does not take into account the mechanisms or processes of reconstructive memory. Laypeople may not, however, previously have considered perspective in remembering and may lack specific beliefs about observer memory, so this remains speculative.

Examining the visual perspective component of folk theories of memory is important not only for its intrinsic interest but also because supposed lay intuitions have been adduced

as evidence for or against philosophical theories of memory. Overall, the studies presented here suggest that, while the everyday concept of memory aligns to some extent with researchers' intuitions regarding field and observer perspectives, that concept may be more flexible than that employed by philosophers and psychologists. Though we found some evidence that field perspectives are thought to be more accurate, which mirrors the "standard view" among researchers, this difference appears to be quite small. There appears to be a real sense in which, in everyday contexts, memory is a relatively fluid concept.

The data we collected from our studies suggest that the way ordinary people think about observer perspectives departs from the philosophical thinking in some ways. Whereas many philosophers think that observer perspectives simply cannot be memories, or that such images are necessarily inaccurate or distorted, laypeople do not seem to share this view. The exact manner in which the reasoning about observer perspectives in folk psychology departs from philosophy is not itself clear from the data. It could be that, whereas the dominant view in philosophy (see, e.g., McCarroll 2018) has been that genuine remembering requires both *truth* and *authenticity*, where truth is a matter of accuracy with respect to the remembered event and authenticity is a matter of accuracy with respect to the subject's original experience of the remembered event (Bernecker 2010), the folk concept of memory may see authenticity as optional. The idea is that subjects are, we have seen, surprisingly willing to classify observer perspective memories as memories. Assuming that—given that it is impossible for one to see oneself "from the outside" during perceptual experience—observer perspective memories can be true but cannot be authentic,<sup>12</sup> this suggests that the folk concept of memory, unlike the dominant philosophical concept, may not require authenticity. This may lend support to what has hitherto been a minority view in philosophy, the view that genuine

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<sup>12</sup> Note that McCarroll (2018) argues that there is a sense in which one can "see" oneself from the outside during perceptual experience and hence that observer perspective memories can in fact be authentic.

remembering requires truth but not authenticity (see Michaelian 2016, and Michaelian and Sant'Anna forthcoming, for defences of this view).

However, some of our data is in tension with this interpretation that the folk concept does not require authenticity. We did not observe any consistently large differences in ascriptions of distortedness between observer perspectives and field perspectives. This is important because there is a conceptual link between “inauthentic” memories and “distorted” memories (De Brigard 2014; Fernández 2015). If the content of an observer memory necessarily diverges from the content of the corresponding perceptual experience, then it is usually understood as distorted or inauthentic. Because we did not observe any consistently large differences in ascriptions of distortedness between the two forms of memory, then perhaps laypeople consider that observer perspectives can indeed be authentic memories, accurately reflecting the subject’s past experience.

Future research should attempt to tease these different factors out, and look in more detail at the relation between truth and authenticity in ascriptions of accuracy in the everyday concept of remembering. One way of doing this in future work would be to test accuracy with “respect to the event” [truth] versus accuracy “with respect to the subject’s experience of the event” [authenticity]. See the next section for further limitations of our studies and directions for future research. For now, we can conclude that, whatever the exact reasoning, the folk understanding of observer perspectives departs in interesting ways from much of the philosophical thinking on the phenomenon.

### **Limitations and Future Research**

The studies reported here were preliminary and hence inevitably had certain limitations. Here, we explore these limitations and outline corresponding potential directions for avenues of future research.

One limitation was that we assumed that episodic or autobiographical memories constitute a unified category. There is, however, important variation within this class. As noted above, different reconstructive processes may be involved in voluntary versus involuntary memories, as well as in memories that are directly recalled versus memories that are generatively recalled: observer perspectives are associated with voluntary and generative memories, while involuntary and direct memories tend to be recalled from a field perspective. Our studies did not explore these differences. In part, this was a methodological decision, due to the difficulty of capturing these distinctions in third-personal vignettes. Furthermore, our studies sought to target the folk concept of memory, rather than collecting data about the visual perspectives from which people do in fact recall when retrieving memories directly or generatively, voluntarily or involuntarily. It is unclear whether laypeople's concept of memory will respect these psychological distinctions and their relation to visual perspective. Testing whether laypeople have these intuitions about different varieties of autobiographical memory is an interesting and important line of further research, one that may also shed light on the results of the present studies.

In fact, this shift in levels of investigation, from a kind of object-level question (focusing on judgments about one's own memories) to the meta-level question we investigated here (investigating lay intuitions about the concept of memory), would be especially interesting in this context, given that we found some divergences between previous work in psychology on memory perspective and our own studies. If laypeople do have an intuition about these different forms of episodic memory, such as voluntary or involuntary, direct or generative, it would be interesting to see if their intuitions about how perspective relates to these distinctions tracks previous work. Again, it will be the job of future research to illuminate these interesting issues.

A further limitation is that it is not clear that participants understood the word “accurately” as intended. It is possible that the way in which the terms “accuracy” and “distortedness” are used in ordinary language (and, consequently, in our studies) does not correspond to the way in which they are used in the philosophy and psychology of memory. It may therefore be worthwhile to employ more qualitative methods in order to get a better grasp of the ordinary meanings of these terms, thus guarding against reading technical usage into ordinary usage.

A final limitation that we would like to single out is that these studies do not allow us to say whether our results would generalize to languages other than English or to groups other than WEIRD populations (Henrich et al. 2010). For example, what intuitions about mnemonicity do non-WEIRD populations have? Do they share the same intuitions about observer memories as the population we tested? Cross-linguistic and cross-cultural work would be needed to determine this. This is a promising avenue for future research.

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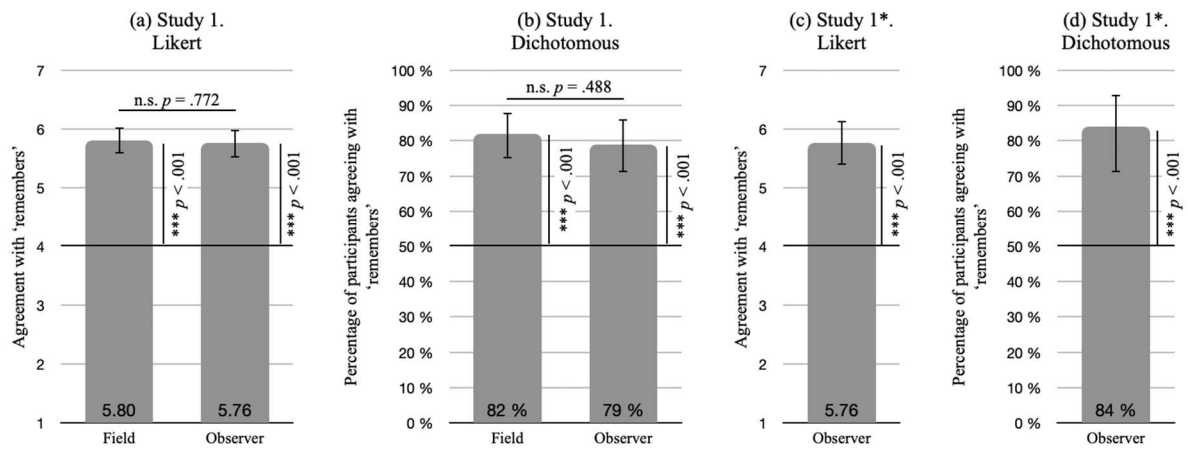


Figure 1. Results of Study 1 (and 1\*). Ascriptions of remembering on a Likert and a dichotomous scale for visualization of a past event from field and observer perspective in Study 1 (a-b) and from observer perspective in Study 1\* (c-d). Reference lines indicate the middle of the scale for (a) and (c) and proportion of responses that could be expected to obtain by chance alone (.50) for (b) and (d). Error bars indicate 95% CI.

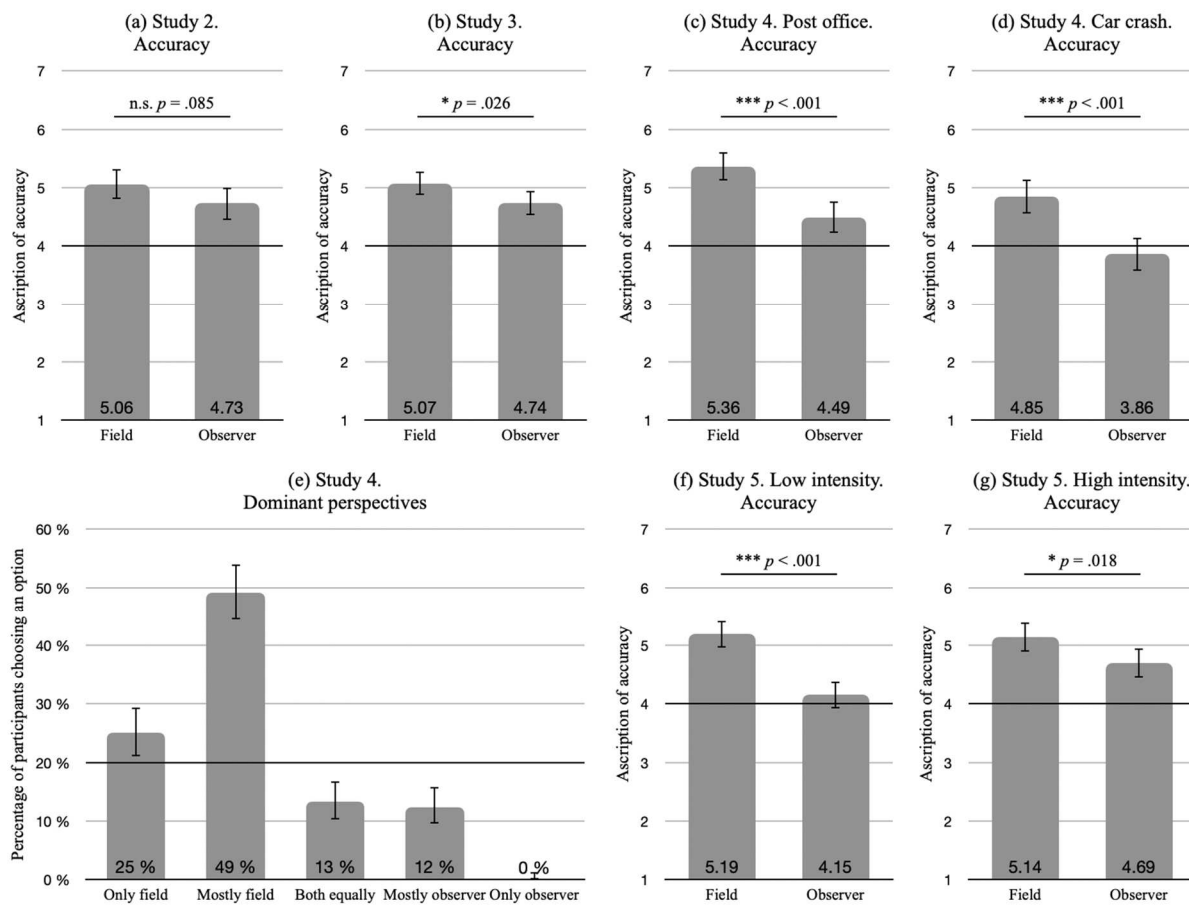


Figure 2. Results of Studies 2-5. Ascriptions of accuracy for field and observer perspective memories in Study 2 (a), Study 3 (b), Study 4 (c-d), and Study 5 (f-g). Distribution of responses about dominant perspectives of remembering in Study 4 (e). Reference lines indicate the middle of the scale (4) in (a-d) and (f-g), and proportion of responses that could be expected to obtain by chance alone (.20) in (e). Error bars indicate 95% CI.