

# Metacognition and the puzzle of alethic memory

André Sant'Anna

*University of Cologne*

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## Abstract

Alethism is the view that successful remembering only requires an accurate representation of a past event. It opposes the truth-and-authenticity view, according to which successful remembering requires both an accurate representation of a past event and an accurate representation of a past experience of that event. Alethism is able to handle problematic cases faced by the truth-and-authenticity view, but it faces an important challenge of its own: If successful remembering only requires accurately representing past events, then how is it possible that our memories are also experienced as originating in past *experiences* of those events? I call this the *puzzle of alethic memory*. I argue that alethism can be reconciled with the claim that memories are experienced as originating in past *experiences* of those events—what I call the *experience of first-handedness*—if we conceive of the phenomenology of remembering in metacognitive terms. According to the metacognitive approach that I favor, the phenomenology of remembering is partly explained by what memory represents and partly explained by the existence of a metacognitive feeling that accompanies memory representations. I argue that accounting for the feeling of first-handedness in terms of the metacognitive feeling that accompanies memory representations allows us to solve the puzzle of alethic memory.

## Keywords

Memory, Remembering, Metacognition, Phenomenology, Alethism

## 1. Introduction: The puzzle of alethic memory

The idea that there are two distinct ways in which we can assess episodic memories for accuracy is quite prominent in the philosophical literature. In his influential discussion of memory, Bernecker (2010) refers to these as *truth* and *authenticity*. On the one hand, a memory is said to

be ‘true’ when it is accurate with respect to a past *event*. On the other hand, a memory is said to be ‘authentic’ when it is accurate with respect to a past *experience*. This ‘dual’ account of the accuracy conditions of remembering has motivated different views about what is required for one to count as *successfully* remembering the past.

According to a first view, which we may call the *truth-and-authenticity* view, successful remembering requires both truth and authenticity.<sup>1</sup> Despite enjoying prominence in recent discussions,<sup>2</sup> the truth-and-authenticity view has come under attack recently. As empirical research and conscious reflection on memory suggest, the perspective from which we remember certain events can change over time, varying between a *field* or *first-person* perspective—i.e., the perspective from which the event was originally experienced—and an *observer* or *third-person* perspective—i.e., a perspective different from the one that characterized experience. The possibility of *perspective switching* (Nigro & Neisser, 1983; McCarroll, 2018) raises an important problem for the truth-and-authenticity view. If remembering requires both an accurate representation of a past experience and an accurate representation of a past event, then we ought to treat observer memories as *misrepresentations* of the past, and, consequently, as *unsuccessful* occurrences of remembering. Given, however, the frequency with which many of us *accurately* remember events from an observer perspective,<sup>3</sup> it seems implausible to treat *all* those memories as unsuccessful.<sup>4,5</sup>

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<sup>1</sup> Although I rely on Michaelian and Sant’Anna’s (2022) characterization of alethism below, I will refrain from using the term ‘authenticism’, as they do in their paper, to refer to the view according to which successful remembering requires both truth and authenticity. Since their usage of the terminology is potentially misleading—i.e., given their definition of alethism, it would be natural to think of authenticism as the view that successful remembering requires only authenticity—I will instead speak of the ‘truth-and-authenticity view’ to avoid confusion.

<sup>2</sup> See, e.g., Bernecker (2010) and McCarroll (2018) for influential defenses.

<sup>3</sup> In a study investigating the proportion in which participants remember from field and observer perspectives, Rice & Rubin (2011) report that about 65% of the participants described an observer perspective as dominant.

<sup>4</sup> McCarroll (2018) has attempted to show that the truth-and-authenticity view is compatible with observer memories. He argues that some experiences involve observer perspectives—they may, for instance, represent the emotive or agentive perspective of an observer in a scene—that are encoded at the time of experience and which, by means of a process of translation, serve as the basis for perspectival representations in observer memories. This allows McCarroll to deny that, at least in some occasions, observer memories misrepresent the past experience, and, consequently, claim that they are sometimes authentic. Michaelian & Sant’Anna (2022) have responded to McCarroll by arguing that given the requirements established by McCarroll for the occurrence of observer memories, it is very unlikely that those memories occur in practice. They propose alethism as a solution to the problem raised by observer memories.

<sup>5</sup> Two concerns are worth nothing here. First, one might worry that it is not obvious why we should treat observer memories as *genuine* memories. Second, it might be added that, even if we accept that they are genuine memories, it does not follow that it is implausible to think that all observer memories are unsuccessful merely because they are frequent. In response to the latter worry, note that the claim here is rather that it is implausible to think that all observer memories are unsuccessful because they quite frequently represent events *accurately*. This is supported by our intuitions regarding those cases, i.e., we do not treat them as misrepresentations of the past (Dranseika et al., 2021,

This has motivated some authors to propose an alternative view of the type of representation that is required for successful remembering. Thus, according to a second view, which we may call *alethism*, successful remembering only requires truth (Michaelian & Sant’Anna, 2022). Alethism, as Michaelian & Sant’Anna (2022) point out, is in a much better position to make sense of observer memories, for it only requires that those memories accurately represent past events.<sup>6</sup> It does not, therefore, imply that observer memories are misrepresentations of the past.<sup>7</sup>

While advantageous in this respect, alethism faces a more general problem concerning the phenomenology of remembering. Episodic memories, many have argued, is characterized by an *experience of first-handedness*: it presents itself as originating in a past experience had by us (Dokic, 2001, 2014; Fernández, 2019). This feature of the experience of remembering allows us to distinguish between information that is genuinely remembered from information that is merely imagined, or information that originates in testimony. Moreover, as recent work has emphasized, this phenomenological feature is also key for understanding important *epistemological* features of memory. It is, for instance, what allows us to claim epistemic authority over the past (Craver, 2020), a capacity that contributed to the evolution of episodic memory in humans (Mahr & Csibra, 2018). But if successful remembering only requires accurately representing past events, as alethism would have it, then how is it possible that our memories are also experienced as

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Study 2). Regarding the former worry, whether observer memories are genuine memories is a substantial dispute that cannot be fully addressed in the context of this paper. However, one straightforward reason for thinking that they are is that, again, our intuitions support this view. As Dranseika et al. (2021, Study 1) show, people consistently treat observer memories as genuine occurrences of remembering. Moreover, since some defenders of the truth-and-authenticity view have tried to account for its genuineness (e.g., McCarroll, 2018), assuming this to be the case, as I do here, does not seem to be particularly problematic. Thanks to an anonymous referee for suggesting that I address these points.

<sup>6</sup> One common objection to alethism is that the view is simply misguided, for it is undeniable that that we sometimes remember experiences. I address this objection in more detail in Section 5.

<sup>7</sup> A referee asks whether the existence of observer memories is the only reason for endorsing alethism. Michaelian and Sant’Anna (2022) also argue that alethism is best suited to make sense of the *continuity* between remembering and imagining—the view that they are processes of the same kind (Michaelian et al., 2022)—because, unlike the truth-and-authenticity-view, it does not require of imagining that it successfully represents future experiences of events. Relatedly, another reason for preferring it comes from empirical research on how episodic representations are produced, which suggests that rather than *experiences*, the content of those representations concerns the *events* experienced (see, e.g., Schacter et al., 2012; Rubin & Umanath, 2015). While, as I discuss in more detail in the next section, this does not exclude the possibility that episodic remembering involves the experience that it originates in a past experience, it highlights the need of an account of this experience in terms of factors other than the *content* of memory representations. Because my goal here is not to motivate alethism, but rather to show how it explains the fact that memory involves an experience of first-handedness, I shall restrict my discussion to the case of observer memories, for it is in that context that the view has been explicitly articulated in the recent literature (see Michaelian & Sant’Anna 2022).

originating in past *experiences* of those events? If correct, alethism would entail that there is no such experience in remembering, which, given conscious reflection, seems implausible.<sup>8</sup>

In what follows, I will refer to the problem of how alethism can make sense of the experience of first-handedness in remembering as the *puzzle of alethic memory*. I will argue that alethism can be reconciled with the claim that memory involves an experience of first-handedness if we conceive of the latter in metacognitive terms. I proceed in the following way. Section 2 discusses the relationship between metacognition and the phenomenology of remembering. I argue that a metacognitive approach to the phenomenology of remembering leaves us with a two-tiered account of such phenomenology, one in which it is partly explained by what memory represents and partly explained by the existence of a metacognitive feeling that accompanies memory representations. Section 3 discusses the intentionality of metacognitive feelings in more detail. I argue that their intentionality is derived, in the sense that metacognitive feelings do not, due to their intrinsic features, represent things in the world. I focus, in particular, on two different ways in which their intentionality can be derived: by means of conscious reasoning based on naïve theories subjects have about their cognitive states, and by means of dispositions formed on the basis of feedback learning processes. Section 4 builds on this account of the intentionality of metacognitive feelings to propose a solution to the puzzle of alethic memory. This solution consists in claiming that the experience of first-handedness is due to a metacognitive feeling whose intentionality is derived from dispositions formed on the basis of feedback learning. This, I suggest, allows us to preserve the idea that episodic memory involves an experience of first-handedness without representing (in a non-derived way) a past experience. Finally, Section 5 addresses a more general objection that can be raised to alethism.

## **2. Metacognition and the two-tiered structure of the phenomenology of remembering**

To solve the puzzle of alethic memory, we should begin by getting clear on why it arises in the first place. The problem faced by alethism arises out of a tension between two claims. The first is a claim about the *contents* of memory—i.e., about what memory *represents*:

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<sup>8</sup> Note that although some philosophers have taken this experience to be characteristic of remembering (e.g., Dokic, 2014; Fernández, 2019), the claim here is not that *all* of our memories involve such an experience, but *only* that some of them do. Even this weaker claim is sufficient for the puzzle of alethic memory to arise.

(1) episodic memories only represent past events

The second is a claim about the *phenomenology* of remembering—i.e., about what we *experience* when we remember:

(2) episodic memories are experienced as originating in past experiences

The reason that these two claims are in tension with one another is that a form of *intentionalism* is assumed as a starting point. According to intentionalism, the experience of remembering—i.e., its phenomenology—is dependent on what it represents—i.e., its content (Fernández, 2019, pp. 29–31).<sup>9</sup> Thus, unless memory represents itself as originating in a past experience, it cannot be the case that it is experienced as originating in a past experience. Since alethism accepts (1) but denies that memory represents past experiences, alethists cannot consistently endorse (2). As a result, we have the puzzle of alethic memory.<sup>10</sup>

Intentionalism is not, however, the only option out there to account for the phenomenology of remembering. In fact, as Perrin and Sant’Anna (2022) argue, intentionalist approaches face a number of challenges in their attempt to explain important features of the phenomenology of remembering. These problems have led some philosophers to propose *metacognitive accounts* as alternatives (Dokic, 2014; Michaelian, 2016; Perrin et al., 2020; Perrin & Sant’Anna, 2022). A key idea for metacognitive accounts is that the phenomenology of remembering is a mental

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<sup>9</sup> As Fernández (2019) notes, there are different ways in which we can understand the notion of ‘dependence’ here—e.g., in terms of identity or supervenience. The weaker interpretation—i.e., in terms of supervenience—will be sufficient for our purposes. On this characterization of the relation, to say that phenomenology depends on content is to say that for there to be any differences in phenomenology, there must be a difference in content.

<sup>10</sup> One possible reaction to this formulation of the puzzle is that it overlooks another problem—and an allegedly more important one—generated by alethism’s denial that episodic memories represent past experiences. Episodic memories, it might be argued, quite often include information about what it was like to experience events; for instance, one’s memory of a thunderstorm may include information about how loud the thunders were, how scared one was, etc. However, unless memories represent experiences, it is difficult to make sense of how these elements can be a part of the experience of remembering. I agree that a complete alethist account needs to explain this feature of the experience of remembering—see Section 5 for a more detailed discussion of how such an account might look like—but it is not clear why an account of the experience of first-handedness in particular should say anything about it. Such an experience can happen even when memory does not represent any sensory details or mental states as experienced by the subject—i.e., even when all it represents is an event—so it is not surprising that these features of the phenomenology allow for separate explanations. (Admittedly, one advantage of intentionalism is that it is able to provide a unified explanation of both these aspects of the phenomenology, but that is by no means a requirement). So, even if one thinks that this problem is more challenging to alethism than that of explaining the experience of first-handedness, this does not change the fact that those answers can be developed independently—although see Section 5, where I argue that it is reasonable to expect that an account of the experience of first-handedness will have priority in the alethist’s agenda. I am grateful to an anonymous referee for raising this issue.

*attribution* that results from the monitoring of the processes responsible for producing memory representations. These attributions are often characterized as *feelings* or *affective* states, which provide us with information about our cognitive states (Arango-Muñoz, 2014).

There are three different ways in feelings can inform us about our cognitive lives (Dokic, 2012; Arango-Muñoz, 2014). One is by providing us with information about our capacity to *initiate* cognitive processes. For instance, the *feeling of knowing* the answer to a question before retrieving the answer itself indicates that we are in a position to successfully engage in the process of retrieving the relevant piece of information. In addition, a feeling can provide us with information about *ongoing* cognitive processes, such as the *feeling of difficulty* experienced when we are having trouble performing a complex calculation. Finally, a feeling can provide us with information about *completed* cognitive processes, such as the *feeling of error* experienced when, after answering a question, we realize that the answer is wrong. Since these feelings inform us about the state of cognitive processes, it has become customary to refer to them as *epistemic*, *noetic*, or *metacognitive feelings* (Arango-Muñoz, 2014).

The question of what the nature of metacognitive feelings is has been the subject of discussion in the recent literature (see, e.g., Dokic, 2012; Arango-Muñoz, 2014; Proust, 2015). Two issues are particularly central for our purposes. The first concerns the *mechanisms* that are responsible for producing those feelings. While different views have been developed, one proposal that has gained traction in recent discussions about the phenomenology of remembering is that metacognitive feelings are produced by a mechanism that monitors subpersonal or unconscious cues pertaining to cognitive processes. These cues are assessed according to heuristic principles, such as the availability of processed information, as well as the frequency and the fluency with which it is processed (Koriat, 2000). More specifically, the assessments are made in relation to a “reference rate”, which determines the nature of the feeling to be produced (Arango-Muñoz, 2014, p. 204). Thus, for instance, if a retrieved piece of information is processed fluently—i.e., above the reference rate for that organism—then that information will be treated as remembered (Jacoby, Kelley, & Dywan, 1989; Whittlesea, 1993).

The second issue concerns the conscious character of metacognitive feelings. Given their importance in modulating behavior, metacognitive feelings are thought to have *valence*, in the sense that they incline us to act in certain ways. That is, feelings provide us with information as to whether it makes sense for us to engage in a certain cognitive process, to revise our strategy as a

certain process is unfolding, or to correct an error after a process is finished. But not only that, metacognitive feelings are also thought to be *about* or to *refer* to cognitive processes. For instance, my feeling of knowing the answer to the question “Where will the 2022 FIFA World Cup be played?” is about my capacity to retrieve a certain piece of information, i.e., “Qatar”. It is because the feeling is about this process that I am able to engage in the cognitive activity required to answer the question. Thus, metacognitive feelings have two distinctive features: they are *affective*, in the sense that they have a certain directionality or valence, and they are *intentional*, in the sense that they are about things in the world (Arango-Muñoz, 2014).

Building on this understanding of metacognitive feelings and the mechanism responsible for them, some philosophers have suggested that the phenomenology of remembering has a ‘two-tiered’ structure (Dokic, 2014; see also Perrin et al., 2020; Perrin & Sant’Anna, 2022). According to two-tiered views, the conscious experience of remembering is determined in part by the nature of the retrieved information and in part by a metacognitive feeling that results from the monitoring of the processes responsible for retrieving that information. Based on a suggestion made by Dokic & Martin (2015) in the context of perception, Perrin & Sant’Anna (2022) argue that there are two “layers” to the phenomenology of remembering: what they call *imagistic phenomenology* and *feeling phenomenology*. As they put it,

*Imagistic phenomenology* refers to the phenomenal features of episodic memory associated with its imagistic content—e.g., the shapes, colours, and spatial layout of the elements of the mental image of an event. *Feeling phenomenology*, in contrast, refers to the affective features associated with a certain imagistic content. (p. 5, my emphasis)

Conceiving of the phenomenology of remembering in this way is particularly helpful to make sense of what makes it distinctive. As empirical research and reflection on phenomenology suggest, the information that figures in remembering and related states, such as imagining and counterfactual thought, can be of the same type (Schacter et al., 2012)—in other words, they can have the same *imagistic* phenomenology—so trying to make sense of the distinctiveness of episodic memory in terms of its *feeling* phenomenology becomes a natural alternative.<sup>11</sup>

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<sup>11</sup> See also Michaelian (2016, Ch. 9), who argues that metacognition allows subjects to solve what he calls the *process problem*, or the problem of determining, from a subjective point of view, whether one is remembering or imagining.

This is, indeed, what has motivated recent metacognitive approaches to the phenomenology of remembering. According to Dokic (2014, 2021), who is perhaps the first philosopher to make an attempt along these lines in a contemporary setting, the experience of remembering is characterized by an ‘episodic feeling of knowing’—which, according to him, indicates that memory originates in a past experience—produced by the monitoring of retrieval mechanisms. Similarly, Perrin (2018) and Perrin et al. (2020) argue that, instead of an episodic feeling of knowing, the feeling characteristic of remembering is best described as a ‘feeling of pastness’, which represents various features traditionally thought to be constitutive of the phenomenology of remembering, such as temporality, the self, causal origin, and particularity (see Perrin et al. 2020 for discussion). Regardless of their disagreements,<sup>12</sup> what these proposals share, and this will be important for our purposes, is the attempt to make sense of (2) above—that is, the claim that episodic memory is experienced as originating in past experiences—in terms of the metacognitive feelings that accompany memory representations.

In moving forward, my suggestion will be that conceiving of the phenomenology of remembering as being two-tiered provides a promising way out of the puzzle of alethic memory. If the phenomenology of remembering is determined by a metacognitive feeling that accompanies a memory representation, then there are aspects of that phenomenology that are *not* determined by what memory represents. To put it differently, the ‘two-tiered’ structure of the phenomenology of remembering allows for a view in which intentionalism is false. And if intentionalism is false, the tension between (1) and (2) above is dissolved. The claim that memory represents *only* past events is not at odds with the claim that memory is experienced as originating in past experiences. As long as the *experience of first-handedness* is due to a metacognitive feeling that *accompanies* a memory representation, alethists can consistently hold (1) and (2).

There is, however, one major difficulty that attempts to solve the puzzle of alethic memory by appealing to metacognition need to deal with. This has to do with the characterization of metacognitive feelings offered above. I said that in addition to being affective, metacognitive feelings are also *intentional*. But if they are intentional, then they represent things as being a certain way, which, intuitively, explains why there are a variety of feelings with different phenomenal

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<sup>12</sup> See Perrin et al. (2020) for a critical discussion of Dokic (2014). See Dokic (2021) for a response.



profiles.<sup>13</sup> For instance, the experience associated with a feeling of knowing is different from the experience associated with a feeling of rightness. Even though both have a positive valence—i.e., they motivate us to continue pursuing a certain path of action—they represent different things. The feeling of knowing is about our capacity to retrieve a certain piece of information. The feeling of rightness is about our confidence that the retrieved information is the correct one. When applied to memory, the suggestion is that the feeling that characterizes remembering allows us to experience memory as originating in past experiences because it represents things as being that way. But if that is the case, then it follows that episodic memories represent past experiences, which takes us back to where we started. In the next section, I take up this challenge in more detail. Building on a suggestion made by Dokic (2012), I will argue that treating metacognitive feelings as intentional is not at odds with claim episodic memory is experienced as originating in past experiences *without* representing those experiences.

### **3. The intentionality of metacognitive feelings**

The fact that metacognitive feelings appear to be *about* things seems undeniable. As noted above, this seems to be a prerequisite for distinguishing the variety of feelings that have been identified and studied empirically. Thus, simply denying that metacognitive feelings are intentional does not seem to be a particularly plausible strategy to deal with the problem introduced in the previous section. How, then, can we reconcile the idea that metacognitive feelings are intentional while denying that the feeling involved in remembering represents past experiences?

The answer to this question, I suggest, lies in specifying the *type* of intentionality that characterizes metacognitive feelings. Metacognitive feelings, as Dokic (2012) notes, do not have intentionality in themselves. They are not, to put it differently, about things because of their *intrinsic* features. Rather, their intentionality is *derived*, in the sense that their aboutness is at least in part due to their relation to other cognitive states (Searle, 1983; Bourget, 2010). In the same way that a point on a map does not, in virtue of its intrinsic features alone, represent the location of a train station, but only does so because we attribute to it the property of representing that location, metacognitive feelings do not, in virtue of their intrinsic features alone, represent things in the world, but only do so because we attribute to them the property of representing those things.

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<sup>13</sup> See Arango-Muñoz and Michaelian (2014) for a review of the different types of feelings that have been discussed in the literature.

Metacognitive feelings are, as Dokic (2012) puts it, fundamentally bodily experiences, “[t]hey are diffuse affective states registering internal physiological conditions and events” (p. 307). The bodily states that they track “are only *contingently* associated with first-order [representational] states” (2012, p. 303, my emphasis).

That the intentionality of metacognitive feelings is derived is best seen by considering recent work on how *fluency*, which is a key heuristic for the production of metacognitive feelings (Koriat, 2000), relates to judgments. Fluency, it has been shown, can influence judgments of different types in different contexts (Oppenheimer, 2008; Unkelbach & Greifeneder, 2013), such as judgments of truth (Hasher et al., 1977), fame (Jacoby, Kelley, Brown, et al., 1989), beauty and pleasantness (Whittlesea, 1993; Reber et al., 2004), familiarity (Jacoby, Kelley, & Dywan, 1989; Whittlesea, 1993), and many other types of judgment.<sup>14</sup> As Oppenheimer (2008) puts it, fluency is “a feeling of ease associated with a cognitive operation ... [that] can be generated by so many cognitive processes”, and, for this reason, “it can serve as a cue toward judgments in virtually any situation” (p. 237).

The question of how feelings of fluency can have these “multiple lives” is an intriguing one (Oppenheimer, 2008). Why, in other words, is it that experiencing  $\phi$  as fluent should motivate judgments that  $\phi$  is true in some contexts, but judgments that  $\phi$  is old or beautiful in some other contexts? Two different answers have been offered to this question (Unkelbach & Greifeneder, 2013). The first consists in saying that people have *naïve theories* about their cognitive states, which they use to interpret the subjective experience of fluency (Schwarz, 2004; Oppenheimer, 2008). Thus, for instance, the reason that fluent experiences motivate judgments of frequency and probability is that people possess the belief that “the more exemplars exist, the easier it is to bring some to mind” (Schwarz, 2004, p. 334). Likewise, fluency is thought to ground judgements of expertise, interest, personal relevance, etc., because people possess the belief that “the more you know about something, the easier it is to come up with examples” (Schwarz, 2004, p. 335).

The second answer is that we learn the source of fluency through feedback received in the relevant context (Unkelbach, 2006, 2007). In support of this view, Unkelbach (2006) has shown that we can manipulate the influence of fluency on judgments in experimental settings by manipulating the meaning of fluency through feedback. If, for instance, participants receive feedback indicating that fluent information means old information after undergoing a preliminary

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<sup>14</sup> For comprehensive reviews, see Schwarz (2004) and Oppenheimer (2008).

recognition test, then fluency will be used as the basis for judgments of oldness in a final recognition test. Similarly, if they receive feedback indicating that fluent information means new information in the preliminary recognition test, then fluency will be used as the basis for judgments of newness in the final recognition test. Importantly, the feedback received involves no conscious articulation of the relationship between fluency and domain of judgment. The association between the two is made implicitly—i.e., when receiving feedback, subjects are only told that whether their answers were correct or incorrect (Unkelbach, 2006).

These two accounts—following Unkelbach & Greifeneder (2013), I will call them *naïve theory* and *feedback learning* accounts respectively—differ with respect to one crucial feature that will figure in the subsequent discussion. This has to do with how they conceive of the *subjective character* of the experience of fluency. On the naïve theory account, subjects have an experience of *fluency*, which, on the basis of conscious reasoning, they take to be about some feature of their environment (truth, beauty, frequency, familiarity, etc.). As Unkelbach & Greifeneder (2013) put it, “naïve theories conceptualize the fluency experience as an input to a metacognitive judgment” (p. 23). On the feedback learning account, subjects no longer have an experience of fluency, but rather an experience of  $\phi$ , in which  $\phi$  corresponds to a feature of the environment that the feeling is experienced as tracking.<sup>15</sup> Feedback learning approaches, according to Unkelbach & Greifeneder (2013), “conceptualize the fluency experience as a perception-like cue in judgments” (p. 23). The experience, they add, “takes on a different meaning in a different context” (p. 22). Thus, for instance, if the context is such that fluency is associated with previously experienced stimuli, then, according to the feedback learning account, subjects will experience fluency as a feeling of *familiarity*.

For our purposes, we need not settle the question of whether the naïve theory account or the feedback learning account is right. It might be, in fact, that they are not mutually exclusive (Unkelbach & Greifeneder 2013, p. 23). Given the wide variety of cognitive processes that can be experienced fluently (Oppenheimer, 2008), it would not be surprising if, in some contexts, the strategy we use to attribute content to those experiences is more ‘deliberate’, involving conscious

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<sup>15</sup> Note that the claim here is not that the feeling *actually* tracks those environmental features, but only that, at the level of conscious experience, the feeling is experienced *as* tracking those features. More precisely, according to the feedback learning account, when a feeling is experienced as a feeling of  $\phi$ , where  $\phi$  stands for an environmental feature, what *is* tracked by the relevant metacognitive processes is still the fluency (and not  $\phi$ ) which information is processed.

reasoning, and, in some other contexts, the strategy we use is more ‘automatic’, relying on feedback received in previous experiences of the same type. What matters for our discussion is that, on both accounts, the *aboutness* of the feeling of fluency is not due to some intrinsic feature of it, but is rather *derived* from an explicit attribution we make on the basis of reasoning (naïve theory) or an implicit learning process (feedback learning). Their intentionality is, as Dokic (2012, p. 303) notes, only *contingently* associated with the informational or representational states that they accompany.

Before I move on to consider the relationship between the intentionality of metacognitive feelings and the puzzle of alethic memory, one important note about the relationship between fluency and metacognitive feelings is required. As discussed in Section 2, fluency is just one of the heuristics responsible for the production of metacognitive feelings (Koriat 2000; Arango-Muñoz 2014). A more comprehensive account of the intentionality of those feelings will, therefore, require a discussion of whether and how those other heuristics contribute to determining their contents. I did not mean to provide such an account and it is beyond the scope of this article to do so. The focus on fluency is, however, particularly fitting when considering the nature of the intentionality of the experience of remembering. As different authors have noted, fluency is central to metacognitive attributions of remembering. Jacoby and collaborators have, for instance, argued that fluency is the basis for the feeling of familiarity, which they take to be characteristic of remembering (Jacoby & Dallas, 1981; Jacoby, Kelley, & Dywan, 1989). Similarly, Perrin and collaborators argue that fluency grounds what they call a ‘feeling of pastness’, which they, too, take to be characteristic of remembering (Perrin 2018; Perrin et al. 2020; Perrin & Sant’Anna 2022). Yet another prominent proposal that gives centrality to fluency is Dokic’s (2014, 2021) account of the phenomenology of remembering, in which it is characterized by an ‘episodic feeling of knowing’. Understanding how the feeling of fluency acquires its intentionality in contexts of remembering does, therefore, provide us with an important source of insight into the nature of the experience of remembering. Taking these observations as starting points, I now return to the puzzle of alethic memory.

#### **4. The puzzle of alethic memory revisited**

The fact that metacognitive feelings only have derived intentionality allows us to see how they can be used to address the puzzle of alethic memory without any inconsistencies. We can conceive of

the intentionality of the metacognitive feeling responsible for the experience of remembering as being derived from an explicit attribution that we make on the basis of reasoning (naïve theory) or from an implicit learning process (feedback learning). Thus, rather than being the bearers of non-derived content, those feelings only have *derived* content, which they inherit from other states or processes. Acknowledging this allows us to retain the idea that those feelings have aboutness, in the sense that they have derived intentionality, while still denying that they represent the past in the way intended by intentionalists—i.e., by having non-derived content.

The appeal to the distinction between derived and non-derived intentionality raises, however, two problems that need to be properly addressed. One is that the solution to the puzzle of alethic memory does not really work if the metacognitive feeling that accompanies memory representations has its intentionality derived from a naïve theory of remembering. More specifically, when applied to remembering, the naïve theory seems to imply that our experience is not, properly speaking, an *experience* of first-handedness, but rather an experience of fluency that, due to our belief that “fluent processing means past experience” in contexts of remembering, is attributed to a past experience on the basis of conscious reasoning. But if that is so, then the solution to the puzzle is not very appealing, for it boils down to denying that there is an experience of first-handedness in the first place.

I agree that such a solution would not be very appealing. While it was not my goal to adjudicate between the naïve theory account and the feedback learning account in the case of remembering, I think that the naïve theory is unlikely to be true if we take introspective reports at face value. When we report on our experience of remembering, we do not speak of there being *beliefs* that the event remembered originates in a past experience, but rather of an *experience* that such is the case. Moreover, the awareness that we have of the origin of remembering seems immediate, in the sense that it does not involve inferential reasoning. Thus, in discussing the naïve theory account, my goal was not to argue that it is a particularly plausible candidate to make sense of the experience of first-handedness in remembering, but rather to motivate the more general idea that the intentionality of metacognitive feelings is derived, with the naïve theory account being just one way of explaining how such a ‘derivation’ may happen.

But if the naïve theory is unlikely to succeed in accounting for the intentionality of metacognitive feelings, then another problem arises. The kind of learning that is central to the feedback learning account, i.e., learning by association, does not seem to involve intentional states

from which the content of metacognitive feelings could be derived. The problem is, then, that if the experience of first-handedness is a metacognitive feeling, it is unclear how it can have the content that it does. This undermines, in turn, the whole enterprise of trying to solve the puzzle of alethic memory by appealing to metacognition.

To address this problem, more needs to be said about how the process of feedback learning imbues metacognitive feelings with content. In particular, the concern here seems to be that content derivation can only occur if there is an *occurrent* state with non-derived content involved in the feedback learning process. To clarify this point, it helps to think in terms of beliefs, which are paradigmatic cases of intentional states. Returning to the Unkelbach (2006) experiment discussed earlier, remember that subjects do not—or at least it is not necessary that they do—form a belief to the effect that “fluency means old/new information” when the relevant feedback is received. All they are told is whether their answers are correct or incorrect. Given, however, that no belief is formed in the feedback phase, the problem is that there is no belief—or any other intentional state—from which the content of fluency can be *derived*.

This is, however, a narrow conception of how content derivation can happen. As Bourget (2010) notes, one way in which mental states can have derived content is by means of *dispositional derivation* (pp. 34-5).<sup>16</sup> For instance, the content of my non-occurrent belief that my car is parked outside is, at least in part, derived from my disposition to react in a certain way—which includes having some intentional states with non-derived content—in the right conditions. In other words, non-occurrent states derive their content from how they are causally related to other intentional states. Similarly, my suggestion is that metacognitive feelings derive their content from our disposition to react in a certain way in the right conditions. In the Unkelbach (2006) experiment, the feeling of fluency becomes about old/new items because subjects are disposed to, among other things, judge that “fluency means old/new information”. Importantly, the claim here is not that subjects need to be able to articulate things in this precise way—i.e., by conceptualizing their experiences in terms of “fluency” or “old/new”. Rather, the suggestion is that they have a disposition to believe that an experience of a certain kind (fluency) is causally related to some environmental feature (old/new), which attributes content to the feeling of fluency.<sup>17</sup>

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<sup>16</sup> Although I endorse Bourget’s (2010) characterization of dispositional derivation, I am skeptical of his claim, made in the same paper, that all phenomenal states are states with underived intentionality (see discussion below).

<sup>17</sup> One might worry that this formulation inverts the order of explanation, in the sense that metacognitive feelings are typically thought to explain why certain judgments are endorsed by the subject, and not the other way around. Note,

Thus, if we think of content derivation along these lines, then it is no longer mysterious how derivation can happen by means of associative learning. More specifically, we can think of the process of feedback learning as being responsible for creating a disposition in us to react in a certain way—including having certain non-derived intentional states—in the presence of a metacognitive feeling. When it comes to the experience of first-handedness in particular, the suggestion is that feedback learning processes create a disposition in us to judge that a representation entertained in mind originates in a past experience. It is this disposition that imbues the metacognitive feeling that we experience in remembering with the content that it has. Contrary to the initial suggestion, then, the feedback learning account provides us with a coherent framework to conceive of how metacognitive feelings can be responsible for an *experience* of first-handedness while still having *derived* content.

One natural reaction to this proposal is that it, too, fails to be an account of the *experience* of first-handedness. More specifically, the worry is that for a conscious experience to be genuinely about  $\phi$ , it must represent (in a non-derived way) that  $\phi$ . But this is problematic for at least two reasons. First, it takes a form of intentionalism for granted. Intentionalism covers a wide range of views, but a shared motivation among these views is that consciousness is fundamentally representational or intentional (Lycan, 2019). So, according to intentionalists, there cannot be conscious states that are not intentional (in a non-derived way). This is, however, what the metacognitive account that I have offered here denies. So, this objection simply begs the question against the type of metacognitive account I am proposing.

Second, and more importantly, how we are disposed to act in a context *does* make a difference to how we experience things in that context. Consider, for instance, the experience of language comprehension when learning a new language. In the initial stages of the learning process, it is not uncommon for us to rely on conscious inferences to grasp the meaning of newly learned words—e.g., upon hearing the French word “poisson”, one might infer, on the basis of a

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however, that the claim here is not that subjects judge that  $\phi$  in contexts of type  $\gamma$  because they have a disposition to believe that  $\phi$  in contexts of type  $\gamma$ . That would indeed get the order of explanation wrong, or at least it would make metacognitive feelings explanatorily innocuous. Rather, the claim is that subjects experience feelings of fluency as being about  $\phi$  because they have a disposition to believe that experiences of type  $\alpha$ —i.e., feelings of fluency—are about  $\phi$  in contexts of type  $\gamma$ . The disposition is, to put it differently, a disposition to believe certain things about the nature of the experiences  $\alpha$  that we have in contexts of type  $\gamma$ . More importantly, this is compatible with feelings of fluency being responsible for the formation of judgments that  $\phi$  in contexts of type  $\gamma$ . A disposition to believe that experiences of type  $\alpha$  are about  $\phi$  in contexts of type  $\gamma$  cannot alone explain why we judge that  $\phi$  in contexts of type  $\gamma$ ; for that to be the case, an *actual* experience of type  $\alpha$  in a context of type  $\gamma$  is also required.

memory of a previous study session, that it is the same as the English word “fish”, and hence take “poisson” to mean or be about fish. However, as we begin to master the language, those inferences become less and less frequent. Rather than relying on conscious inferences to relate words in different languages, this process becomes automatized, in the sense that we are able to associate the words with the things they stand for in the world more or less right away. In other words, we develop a *disposition* to react to occurrences of the novel words that no longer require us to engage in a conscious process of “translation”. Furthermore, acquiring this disposition changes the *experiences* we have when we hear or read those words.<sup>18</sup>

By the same token, I want to suggest that the fact that we are disposed to judge that  $\phi$  in the presence of a certain metacognitive feeling does make a difference to how we experience that feeling. The difference in question is that we experience this feeling as being *about*  $\phi$ . In the same way that one’s experience of the word “poisson” changes as one gradually acquires a disposition to react to it in the process of language learning, one’s experience of a metacognitive feeling changes as one gradually acquires a disposition to react to it in the process of feedback learning. The analogy to language comprehension is particularly telling here, for language is a paradigmatic example of derived intentionality. The string of letters “poisson” does not, in and of itself, represent anything. It only does so because beings with non-derived intentional states take it to mean fish. Thus, the fact that it has derived content does not prevent us from experiencing it as being *about* things in the world.

One might object here that rather than explaining the experience of first-handedness, the appeal to dispositions explains it away. In other words, the disposition we have to judge the events represented in memory as things experienced in the past merely makes it *seem* to be the case that we have an experience of first-handedness. This objection does, however, rest on a misunderstanding. The metacognitive account I have offered here does not say that what explains the experience of first-handedness is the disposition to judge that we experienced the remembered events. If that were the case, there would be no need to talk about metacognitive feelings in the first place. Rather, the claim is that the presence of a metacognitive feeling with a specific derived content is what explains why there is an *experience* of first-handedness. The disposition to judge that we experienced the events remembered is only meant to explain how the relevant

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<sup>18</sup> For an attempt to account for the experience of linguistic understanding in terms of metacognitive feelings, see Drożdżowicz (forthcoming).



metacognitive feeling—i.e., the feeling of fluency—acquires, by means of feedback learning, the derived content that it has when we remember. So, while the objection has it right that the existence of a disposition alone is not sufficient to explain the *experience* of first-handedness, it overlooks the fact that it is the metacognitive feeling that does the explanatory heavy lifting insofar as the question of why we should think that there is an *experience* of first-handedness in the first place is concerned.

Another potential concern with the attempt to account for the experience of first-handedness in terms of feedback learning is that it is unclear how such feedback is received in ecological contexts. What are the conditions in which we learn that fluency means information originating in a past experience?

A complete answer to this question cannot be given here, but one promising approach is to look into how metacognitive capacities are shaped by cultural learning (Heyes et al., 2020; Mahr et al., forthcoming). Mahr et al. (forthcoming) argue, for instance, that the capacity that we have to identify our mental states as memories is a cognitive gadget (Heyes, 2018)—i.e., an ability made possible by cultural learning. Of crucial importance here is our learned capacity to narrate the past on the basis of our memories. This capacity is learned by communicating with others, in particular with our parents (Nelson & Fivush, 2004; Fivush, 2011). A key feature of these reminiscing narratives is that they are about (i) events that happened in the past, and (ii) events that were experienced by us (Fivush, 2011, pp. 570–573). Thus, learning to engage in reminiscing narratives is a process of trial and error in which parents teach children the norms for “good” narrative construction (Fivush & Reese, 1992; Reese, 2002; Fivush, 2011). Moreover, because previously experienced events tend to be represented more fluently in the present, one important piece of feedback that we learn is that fluent representations are good candidates for becoming parts of reminiscing narratives. In other words, we learn by feedback that fluent representations are about (i) past events that happened and (ii) events experienced by us.

In summary, the puzzle of alethic memory can be resolved if we conceive of the experience of first-handedness as the result of a metacognitive feeling that accompanies memory representations. This solution is not incompatible with the fact that metacognitive feelings have aboutness as long as their intentionality is derived. In particular, if we conceive of content derivation in terms of dispositional derivation, then we have an account of how we can experience

our memories as originating in past experiences without representing (in a non-derived way) things to be that way.

## 5. Alethism and memories of experiences

Before I conclude, I should address one concern that is likely to occur to many readers. One might think that alethism is simply wrongheaded as a view of the contents of memory, for it appears to deny what seems to be a well-established fact about remembering: i.e., that we can, and very often do, remember our experiences. To be more precise, it seems undeniable that we remember how things appeared to us, as well as our emotions and thoughts on a given situation. Does alethism imply that those are not memories? If not, what can an alethist say about them?

Since answering the puzzle of alethic memory is already project in itself, a convincing alethist answer to these questions cannot be given here. There are, however, some things that can be said to alleviate this concern, which will also help to clarify why, from an alethist's perspective, resolving the puzzle of alethic memory is explanatorily more pressing. In particular, one strategy alethists can adopt is to draw a distinction between two different ways in which memory can be said to represent an experience and argue that only one of them is incompatible with the view. The first way is when an experience is represented as having been experienced—i.e., when a subject represents herself as having been the subject of an experience with certain subjective properties. The second is when an experience with certain subjective properties is represented as an event in the world—i.e., as something that happened, but that was not experienced by the subject. On a somewhat more precise formulation, the differences in the contents of those representations could be described by, respectively, the two following propositions:

(a) <There was an experience  $x$  such that  $x$  was experienced by  $S$  as having properties  $y$  and  $z$ >;

(b) <There was an experience  $x$  with properties  $y$  and  $z$ >

where  $y$  and  $z$  stand for the relevant subjective properties possessed by the experiences. (b), the alethist may insist, is a representation of an *event* in the alethist sense, and hence is not incompatible with the view.

Representing an experience as an event cannot, however, be the full alethist story, for it still does not give us an account of why, when we represent experiences as events in memory, it seems to us that we are the subjects of those experiences. It is for this reason that the task of explaining how the experience of first-handedness is possible has priority in the alethist's agenda. If the solution to the puzzle of alethic memory I offered here is correct, then the reason that we experience ourselves as the subjects of experiences which are represented as events in memory is that those representations are accompanied by a metacognitive feeling whose derived content is that the experience represented as an event originates in a past experience had by us. Thus, alethists can only explain what it is like to remember an experience if they can first provide a convincing solution to the puzzle of alethic memory.<sup>19</sup>

There is, of course, much more to be said to motivate and defend such an account, but hopefully this sketch suffices to show that alethism is not simply misguided and that it does have resources to make sense of the intuitive idea that memories can also be about experiences.

## 6. Conclusion

Alethism is the view that successful remembering only requires an accurate representation of a past event. It opposes the truth-and-authenticity view, which says that successful remembering requires both an accurate representation of a past event and an accurate representation of a past experience of that event. Alethism is able to handle problematic cases faced by the truth-and-authenticity view, most notably the possibility of perspective switching in remembering. However, it faces an important challenge: If successful remembering only requires accurately representing past events, then how is it possible that our memories are also experienced as originating in past *experiences* of those events? This is what I called the *puzzle of alethic memory*.

I argued that the puzzle of alethic memory can be resolved if we conceive of the experience of first-handedness in remembering in metacognitive terms. In discussing the relationship between metacognition and the phenomenology of remembering, I argued that despite being about things in the world, metacognitive feelings only have derived intentionality, which they acquire from other intentional states with non-derived content or from dispositions formed during a process of

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<sup>19</sup> Note that alethists' commitment to the existence of memories with content (b) does not undermine their attempt to provide a solution to the puzzle of alethic memory. Memories with content (b) are not experienced as first-hand—i.e., as originating in experiences *had by us*. So, even those cases call for an explanation of how the experience of first-handedness is possible.

feedback learning. Conceiving of metacognitive feelings in this way allows us to explain how remembering can involve an experience of first-handedness without representing (in a non-derived way) a past experience. A metacognitive approach to the phenomenology of remembering, I argued, allows alethists to solve the puzzle of alethic memory.

There is, of course, much more to be said to defend an alethist approach to remembering. It was not, however, my goal to provide a comprehensive defense of the view here. Questions such as whether alethism implies that we can remember things that we did not experience, or how it can make sense of the fact that we sometimes seem to remember our experiences, are important ones that will need to be addressed in future work. The account I have offered of the experience of first-handedness does, however, take an important step in the direction of providing a defense of alethism. It shows that, insofar as the phenomenology of remembering is concerned, alethism is in a good position to make sense of at least some of its key features.

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## References

- Arango-Muñoz, S. (2014). The nature of epistemic feelings. *Philosophical Psychology*, 27(2), 193–211.
- Arango-Muñoz, S., & Michaelian, K. (2014). Epistemic Feelings and Epistemic Emotions. *Philosophical Inquiries*, 2(1), 1–23.
- Bernecker, S. (2010). *Memory: A Philosophical Study*. Oxford University Press.
- Bourget, D. (2010). Consciousness is underived intentionality. *Noûs*, 44(1), 32–58.
- Craver, C. F. (2020). Remembering: Epistemic and empirical. *Review of Philosophy and Psychology*, 11(2), 261–281.
- Dokic, J. (2001). Is memory purely preservative? In C. Hoerl & T. McCormack (Eds.), *Time and Memory: Issues in Philosophy and Psychology* (pp. 213–232). Oxford University Press.
- Dokic, J. (2012). Seeds of self-knowledge: Noetic feelings and metacognition. In M. Beran, J. Brandl, J. Perner, & J. Proust (Eds.), *Foundations of Metacognition* (pp. 302–321). Oxford University Press.
- Dokic, J. (2014). Feeling the past: A two-tiered account of episodic memory. *Review of Philosophy and Psychology*, 5(3), 413–426.

- Dokic, J. (2021). Episodic remembering and affective metacognition. *Acta Scientiarum. Human and Social Sciences*, 43(3). <https://doi.org/10.4025/actascihumansoc.v43i3.61022>
- Dokic, J., & Martin, J.-R. (2015). ‘Looks the Same but Feels Different’: A Metacognitive Approach to Cognitive Penetrability. In J. Zeimbekis & A. Raftopoulos (Eds.), *The Cognitive Penetrability of Perception: New Philosophical Perspectives* (pp. 241–267). Oxford University Press.
- Dranseika, V., McCarroll, C. J., & Michaelian, K. (2021). Are observer memories (accurate) memories? Insights from experimental philosophy. *Consciousness and Cognition*, 96, 103240.
- Drożdżowicz, A. (Forthcoming). Experiences of linguistic understanding as epistemic feelings. *Mind & Language*.
- Fernández, J. (2019). *Memory: A Self-Referential Account*. Oxford University Press.
- Fivush, R. (2011). The development of autobiographical memory. *Annual Review of Psychology*, 62, 559–582.
- Fivush, R., & Reese, E. (1992). The social construction of autobiographical memory. In Conway M. J., Rubin, D. & W. Wagenaar (Eds.), *Theoretical perspectives on autobiographical memory* (pp. 115–132). Springer.
- Hasher, L., Goldstein, D., & Toppino, T. (1977). Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior*, 16(1), 107–112.
- Heyes, C. (2018). Cognitive gadgets. In *Cognitive Gadgets*. Harvard University Press.
- Heyes, C., Bang, D., Shea, N., Frith, C. D., & Fleming, S. M. (2020). Knowing ourselves together: The cultural origins of metacognition. *Trends in Cognitive Sciences*, 24(5), 349–362.
- Jacoby, L. L., & Dallas, M. (1981). On the relationship between autobiographical memory and perceptual learning. *Journal of Experimental Psychology: General*, 110(3), 306.
- Jacoby, L. L., Kelley, C., Brown, J., & Jasechko, J. (1989). Becoming famous overnight: Limits on the ability to avoid unconscious influences of the past. *Journal of Personality and Social Psychology*, 56(3), 326.
- Jacoby, L. L., Kelley, C. M., & Dywan, J. (1989). Memory attributions. In H. L. Roediger III & F. I. M. Craik (Eds.), *Varieties of memory and consciousness: Essays in honour of Endel Tulving*. (pp. 391–422). Lawrence Erlbaum Associates, Inc.
- Koriat, A. (2000). The feeling of knowing: Some metatheoretical implications for consciousness and control. *Consciousness and Cognition*, 9(2), 149–171.
- Lycan, W. (2019). Representational Theories of Consciousness. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2019). Metaphysics Research Lab, Stanford University. <https://plato.stanford.edu/entries/consciousness-representational/>
- Mahr, J., & Csibra, G. (2018). Why do we remember? The communicative function of episodic memory. *Behavioral and Brain Sciences*, 41, E1. <https://doi.org/10.1017/S0140525X17000012>
- Mahr, J., van Bergen, P., Sutton, J., Schacter, D. L., & Heyes, C. (Forthcoming). Mnemicity – A cognitive gadget?. *Perspectives on Psychological Science*.

- McCarroll, C. (2018). *Remembering from the outside: Personal memory and the perspectival mind*. Oxford University Press.
- Michaelian, K. (2016). *Mental Time Travel: Episodic Memory and Our Knowledge of the Personal Past*. MIT Press.
- Michaelian, K., & Sant'Anna, A. (2022). From authenticism to alethism: Against McCarroll on observer memory. *Phenomenology and the Cognitive Sciences*, 21, 835–856.
- Michaelian, K., Perrin, D., Sant'Anna, A., & Schirmer dos Santos, C. (2022). Mental time travel. In V. P. Glaveanu (Ed.), *The Palgrave Encyclopedia of the Possible*. Palgrave Macmillan.
- Nelson, K., & Fivush, R. (2004). The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review*, 111(2), 486.
- Nigro, G., & Neisser, U. (1983). Point of view in personal memories. *Cognitive Psychology*, 15(4), 467–482.
- Oppenheimer, D. M. (2008). The secret life of fluency. *Trends in Cognitive Sciences*, 12(6), 237–241.
- Perrin, D. (2018). A Case for Procedural Causality in Episodic Recollection. In K. Michaelian, D. Debus, & D. Perrin (Eds.), *New Directions in the Philosophy of Memory* (pp. 33–51). Routledge.
- Perrin, D., Michaelian, K., & Sant'Anna, A. (2020). The phenomenology of remembering is an epistemic feeling. *Frontiers in Psychology*, 11, 1531.
- Perrin, D., & Sant'Anna, A. (2022). Episodic memory and the feeling of pastness: From intentionalism to metacognition. *Synthese*, 200(2), 1–26.
- Proust, J. (2015). The representational structure of feelings. In T. Metzinger & J. Windt (Eds.), *Open Mind* (pp. 1–26). Open MIND. Frankfurt am Main: MIND Group.
- Reber, R., Schwarz, N., & Winkielman, P. (2004). Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Personality and Social Psychology Review*, 8(4), 364–382.
- Reese, E. (2002). Social factors in the development of autobiographical memory: The state of the art. *Social Development*, 11(1), 124–142.
- Rice, H. J., & Rubin, D. C. (2011). Remembering from any angle: The flexibility of visual perspective during retrieval. *Consciousness and Cognition*, 20(3), 568–577.
- Rubin, D. C., & Umanath, S. (2015). Event memory: A theory of memory for laboratory, autobiographical, and fictional events. *Psychological Review*, 122(1), 1.
- Schacter, D. L., Addis, D. R., Hassabis, D., Martin, V. C., Spreng, R. N., & Szpunar, K. K. (2012). The future of memory: Remembering, imagining, and the brain. *Neuron*, 76(4), 677–694.
- Schwarz, N. (2004). Metacognitive experiences in consumer judgment and decision making. *Journal of Consumer Psychology*, 14(4), 332–348.
- Searle, J. R. (1983). *Intentionality: An Essay in the Philosophy of Mind*. Cambridge University Press.

- Unkelbach, C. (2006). The learned interpretation of cognitive fluency. *Psychological Science*, 17(4), 339–345.
- Unkelbach, C. (2007). Reversing the truth effect: Learning the interpretation of processing fluency in judgments of truth. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 33(1), 219.
- Unkelbach, C., & Greifeneder, R. (2013). A general model of fluency effects in judgment and decision making. In C. Unkelbach & R. Greifeneder (Eds.), *The experience of thinking: How the fluency of mental processes influences cognition and behaviour*. (pp. 11–32). Psychology Press.
- Whittlesea, B. W. (1993). Illusions of familiarity. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 19(6), 1235.