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Recollection, belief and metacognition: A reality check

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Abstract

Non-believed autobiographical memories (e.g. Mazzoni, Scoboria & Harvey, 2010) are striking examples of divergences between recollective experiences and beliefs in their correspondence to real events. After reviewing a broader range of similar phenomena, I argue that recollection-belief divergences can arise from normal, 'healthy' metacognitive monitoring and control processes that balance memory recollections and reality constraints. Such validating 'reality checks' draw on general world knowledge and external/social information. Importantly, changes in (perceived) reality constraints can lead to changes in memory beliefs. More generally, both recollection and (external) reality are keys to the past. In many cases, more or less automatic (System 1-type) reliance on recollection is sufficient (or memory would be useless as a system), but sometimes more elaborate (System 2-type) reality checks are needed. I conclude with some ideas about memory-driven and reality-driven recollection-belief divergences.

Keywords: memory, recollection, belief, metacognition, reality.

Recollection, belief and metacognition: A reality check

One of the most interesting recent developments in memory psychology is the discovery of non-believed autobiographical memories (Mazzoni, Scoboria & Harvey, 2010) and the subsequent systematic exploration of such divergences between (autobiographical) memory recollections and beliefs (Clark, Nash, Fincham & Mazzoni, 2012; Otgaar, Scoboria & Mazzoni, 2014; Scoboria et al., 2014). The intriguing insight offered by this research is that people can recollect autobiographical events from memory and at the same time believe that these events did not happen. Moreover, such non-believed memories are more than anecdotal occurrences but occur with some regularity (for instance, Mazzoni et al., 2010, report that 20% of their sample held at least one).

As spectacular as they may be, non-believed autobiographical event memories are not the only manifestations of divergences between recollections and beliefs in memory. I will begin this article with a brief review of a few well-known memory phenomena that can be seen as further examples of recollection-belief divergences, with the purpose of demonstrating that the utility of differentiating between these two aspects of remembering is by no means limited to autobiographical memory. I will then point out that recollection-belief divergences reflect the normal operation of a metacognitive *validation* mechanism within the process of remembering (Blank, 2001, 2009). To ensure the functionality of the memory system, the raw output of the memory system (i.e. memory recollections) needs to be ‘reality-checked’ (which can occur in various different ways, including the consultation of external/social evidence), and sometimes this results in beliefs about the past that diverge from the raw memory output. Importantly, as reality constraints (e.g. social influence) may change over time, so will beliefs about the past, and consequently recollection-belief divergences may appear and disappear, which will be highlighted in a separate section. I will then explore the roles of individual memory and (social) reality as keys to the past more systematically, contrasting automatic/heuristic (System 1) and conscious/elaborate (System 2) ways of arriving at beliefs

about the past. I conclude with ideas about factors affecting recollection-belief divergences over time that could be explored in future research.

Varieties of recollection-belief divergences

Autobiographical non-believed memories are extreme examples of recollection-belief divergences in remembering, but such divergences can take on many different forms, depending on the nature of the recollection and belief in question. Recollection generally refers to some ‘raw output’ of the memory system (‘ecphoric information’, i.e. resulting from an ecphory process in which memory cues interact with stored information; Tulving, 1983). This output may be in the form of a visual image (or other sensory representation) or of a verbal/conceptual nature. Beliefs, by contrast, are formed on the basis of recollections and additional information in a process of memory validation (described in more detail in the next section) and entail as an essential feature an attribution to past reality (i.e. “this happened”). Importantly, in the present context, both recollections and beliefs vary along several dimensions including, at least, their generality/specificity (e.g. whole autobiographical episodes, major or minor events, or specific people, objects or actions within events¹), clarity/strength (i.e. clear or vague recollections and beliefs held with strong or weak confidence) and their veracity (i.e. false or veridical recollections and/or beliefs). Along these

¹ Beliefs related to autobiographical events – the example I started out with – are typically general, pertaining to whether or not the whole event ever truly happened. In the context of this special issue, it is important to point out that Scoboria et al. (2014) distinguish such general ‘beliefs in occurrence’ (a concept first introduced by Mazzoni & Kirsch, 2002) from what they variously call ‘beliefs in recollection’ or ‘beliefs in accuracy’, that is, beliefs not just in the occurrence of an event but more specifically in the accuracy of the recollected event details (see also Rubin, 2006; Scoboria, Talarico & Pascal, 2015). I doubt that these two concepts can be sharply separated, mainly because there is no universally agreed-upon definition of ‘event’, and consequently what is an event associated with a belief in occurrence relative to one description (e.g. ‘the attacker pulled a knife’) may be a detail, related to a belief in accuracy, relative to a different description (e.g. ‘there was an assault’) – it is essentially a matter of event ‘grain size’. For the present purposes, it is more important to highlight what both types of beliefs have in common, namely that recollections are assigned a (subjective) truth value reflecting their correspondence to the actual past. This also applies to my independently developed notion of memory beliefs (Blank, 2001, 2009), which encompasses both understandings of ‘belief’ discussed so far (i.e. occurrence and accuracy), and which is also more inclusive in that it refers to any episodic memories (not only autobiographical ones). In the remainder of this article, I will variously speak of beliefs or memory beliefs, but always in the most adequate sense for the present purposes, that is, beliefs at any level of generality/specificity that come with a claim to past reality.

lines, a number of well-known memory phenomena can be reconstructed as different types of recollection-belief divergences (see Table 1).

Déjà-vu. In déjà-vu experiences, the ‘raw output’ of the memory system consists in a feeling of recognition (e.g. of having been in some situation before), which is accompanied by a strong awareness of inaccuracy (i.e. certainty that one has never been in this situation; see Brown, 2003, for an overview). If we accept, for the present purposes, a feeling of recognition as some form of recollection², a déjà-vu experience would accordingly constitute an example of a recollection-belief divergence.

Misinformation effect. Divergences between recollection and belief can also arise in the classic eyewitness misinformation paradigm (Loftus, Miller & Burns, 1978; see e.g. Zaragoza, Belli & Payment, 2006, for a review). Specifically, McCloskey and Zaragoza (1985) drew attention to conflicts between what people thought they remember from a witnessed stimulus event (e.g. a screwdriver in a toolbox) and what they trusted was an accurate account of that event (e.g. a narrative provided by the experimenter describing the tool as a hammer), leading them sometimes to distrust their own recollection and base their belief about this detail of the witnessed event on the narrative.

Memories of childhood sexual abuse. Further, in the context of (recovered or false) adult memories of childhood sexual abuse (see Ost & Tully, 2016, for a review of the scientific controversy), two types of recollection-belief divergences may arise at different stages of engaging with the possibility of sexual abuse. Firstly, a person may not have any concrete memories of having been abused but may come to believe (e.g. over the course of a therapeutic process) that they had been (Case a); subsequently they may reconstruct or develop abuse memories and thereby reduce the divergence. Secondly, a person may have

² A feeling of recognition (as featured in déjà vu) would translate into *familiarity* rather than *recollection* in some contexts (see e.g. Yonelinas, 2002). This distinction is not important for the argument I am developing here. What is crucial is the conceptual distinction between any initial output of the memory system – whether a feeling of familiarity or a detailed recollection of an event – and the truth value (in the sense of corresponding to past reality) assigned to this output. In keeping with the theme of this special issue, I will stick to the notion of recollection, but use it more broadly to refer to any type of recollective experience, however vague or detailed.

(developed) concrete abuse memories but later lose belief in them (Case b), for instance following a change in the social or therapeutic context (see Ost, Costall & Bull, 2001, 2002, for reviews of reasons for retracting sexual abuse memories); the memories may subsist or deteriorate over time (Ost, this issue). In the first case, the divergence exists between the belief of having been abused and the absence of a detailed recollection (or a vague and ambiguous one), and in the second case it consists in an ‘estranged’ recollection (similar to non-believed memories, but see Ost, this issue, for some differences).

Stereotype-induced memory distortion. Finally (in this list), there is a whole literature on the distorting influence of social stereotypes – or also more generally expectations – on memory (see reviews by Fyock & Stangor, 1994; Stangor & McMillan, 1992; van Knippenberg & Dijksterhuis, 1996). In a classic demonstration, Allport and Postman (1945) showed participants an ambiguous aggressive encounter between two men, one of which held a knife. In line with the stereotype at the time, many participants later misremembered the black man involved in the encounter, rather than his white counterpart, to have pulled the knife. More generally, divergences can arise between recollected (and sometimes vague and ambiguous) person details or actions and related stereotypical beliefs about the prevalence of these in particular social group-related settings (and hence in the target episode), which will often be resolved through biased remembering of initially recollected stereotype-inconsistent details/actions/events in line with the stereotype-informed beliefs regarding the target episode (Fyock & Stangor, 1994; van Knippenberg & Dijksterhuis, 1996).³

- Insert Table 1 about here -

This list is most certainly not complete, but it will suffice to make the point that recollection-belief divergences are neither rare occurrences nor limited to autobiographical

³ As an exception to this rule, the divergence may also be resolved in favour of the initial recollection if details or actions are so clearly stereotype-inconsistent that they had already been encoded (‘tagged’) as deviations from the stereotype (Stangor & McMillan, 1992).

memory. Moreover, it illustrates that these divergences can be quite varied in nature, consistent with the idea that both recollection and beliefs vary along dimensions of generality/specificity, clarity/strength and veracity. Sometimes – as in the cases of non-believed autobiographical memories, ‘overruled’ event memories in misinformation studies, or (to some degree) retracted childhood sexual abuse memories – the divergence involves a lack of belief⁴ in a recollection from memory. In other cases – such as recovered/constructed memories of childhood sexual abuse or stereotypically biased memories of people or events – strong externally informed beliefs contrast with vague or absent memory recollections. And there may be cases in between, for example, vague recollections of events contrasting with slightly different versions provided by other people, etc. The important point to make in the next section is that such divergences can arise as a matter of course from normal, ‘healthy’ monitoring and control functioning within the memory system.

Recollection-Belief Divergences and Validation

Memory recollections in and of themselves are not necessarily of any use. In a process of validation, they need to be transformed into what I have called memory beliefs or beliefs about the past (Blank, 2001, 2009). That is, whatever pops up in one’s mind at some point needs to be interpreted as being about an actual past event – as opposed to a daydream, for instance – that happened in a particular way at a particular point in time (even though such qualifications may be vague). These beliefs may then be further communicated to the outside world and turned into observable remembering (see Blank, 2001, 2009, for detailed descriptions).

What is important for our purposes here is that recollections need a ‘reality check’ before they can be endorsed as memory beliefs. This reality check can draw on different sources of information about the past. Firstly, people can draw on their own world knowledge. For instance, in Scoboria, Mazzoni, Kirsch and Relyea’s (2004) nested model,

⁴ I am slightly simplifying things here; in many cases there is a (substantial) decrease but not a completely lack of belief in the memory. See Mazzoni et al. (2010) and Scoboria et al. (2014) for details related to autobiographical event memories; the same holds respectively for original event memories in misinformation studies and recollections of childhood sexual abuse. The important point, for our purposes, is that belief is substantially lower than recollection along a clarity/strength dimension.

memory beliefs first depend on general event plausibility and then further on personal plausibility (i.e. plausibility of such an event happening to oneself); that is, events need to be generally and personally plausible before they can be endorsed as beliefs about the past. Further, in some cases objective evidence is available (i.e. documents, photographs, audiotapes etc.) that can be consulted for validation purposes. Finally, people can draw on other people's relevant knowledge about the past. This will typically be people who co-experienced or co-witnessed an event, and the degree to which they are relied upon in forming memory beliefs will depend on (1) their perceived credibility and (2) the uncertainty around one's own recollections (perhaps after one's world knowledge and any objective evidence have been taken into account, although I am not suggesting a particular sequence in which these different sources of evidence about the past are consulted). The link between uncertainty and turning to social evidence was established more than half a century ago in Festinger's theory of social comparison processes (Festinger, 1954), and opens the (theoretical) door to a world of research on social influence that can be applied to memory and remembering (but will not be covered here; see Blank, Walther & Isemann, 2016; Nash, Wheeler & Hope, 2015; for reviews). Suffice it to mention for illustration that in a survey of reasons to abandon belief in autobiographical memories, persuasive evidence provided by other people was by far the most prominent one (Scoboria, Boucher & Mazzoni, 2015).

The processes involved in the validation of memory recollections and their outcomes vary as a function of the uncertainty of the memory recollection and the nature of the external⁵ evidence considered. Sometimes, (elements of) recollections may just be interpreted in a particular way, as in the case of stereotype-induced memory distortions. In other cases, they may be supplemented with plausible detail information, for instance from event schemata (see e.g. Pezdek et al., 1989) or from available post-event information (see McCloskey & Zaragoza's *misinformation acceptance* process, 1985). In still other cases, recollected memory information may be contradicted and overridden by external evidence

⁵ By external I mean in this context 'external to the memory recollection'. For instance, world knowledge may be individually acquired and internally stored, but it is separate from episodic or autobiographical recollections and in this sense considered external evidence.

(e.g. deciding in favour of credible misinformation in a *deliberation* process, McCloskey & Zaragoza, 1985; or retracting previous sexual abuse memories, Ost et al., 2001, 2002). Last not least, recollections may of course also be corroborated by external evidence; this should in fact be the most common case (or the reliability of the memory system would be in serious doubt).

In any case, recollection-belief divergences may arise, in these various forms, during the normal process of validation of memory recollections (Blank, 2001, 2009). This validation function is of course also reflected in other, more explicitly meta-cognitive, approaches to remembering (e.g. Koriat & Goldsmith, 1996; Goldsmith & Koriat, 2008)⁶, although the monitoring process featured within Koriat and Goldsmith's approach focusses more narrowly on confidence assessments and does not take external evidence bearing on the validity of the recollection into account (although there is no principal reason why this could not be built into the approach). Whatever the precise validation approach, the key principle is that memory recollections are subjected to reality constraints, and sometimes – such as with non-believed autobiographical memories – the recollection has to 'give in' in the face of (perceived) reality. A corollary of this idea – to which I turn now – is that if (perceived) reality constraints change, memory beliefs may follow suit.

Changed Views of Reality can Change Memory Beliefs

Interestingly, while temporal trajectories of memories are very prominent features in any analysis of *forgetting*, they are rarely emphasised in research on memory distortion, as can be inferred from the fact that presumed-changed memories are rarely ever followed up. The recent distinction between memory recollections and beliefs, with its emphasis on the dynamic interplay between them (e.g. factors leading to loss of belief in recollections; Scoboria et al., 2015), also highlights the temporal dynamics and changeability of recollections and beliefs in general. A good illustration is research by Otgaar, Scoboria and Smeets (2013; see also Clark et al., 2012), which first created false memories (reflecting both

⁶ In fact, Mazzoni and Kirsch's (2002) discussion of autobiographical beliefs (introducing the concept of 'belief in occurrence', see Footnote 1) draws in part on Koriat and Goldsmith's work.

recollection and belief) in participants and then discredited them again (which affected belief more than recollection). Hence, both memory recollections and beliefs are variable over time as a function of the situational context, but beliefs more so than recollections (the latter having more 'inertia', so to speak). That memory beliefs should be more susceptible to change ties in nicely with Nash et al.'s (2015) argument that beliefs are particularly sensitive to social influence (which may lead to belief change), and it also fits with the idea (elaborated further below) that validating memory beliefs can be done in a more flexible System 2 style through consulting external sources of information, or alternatively in a more automatic and inflexible System 1 style, basing beliefs primarily on recollections.

Several examples from the literature support the idea that memory beliefs can change as a function of changed external input into the validation process. For instance, Oeberst and Blank (2012) demonstrated a reversal of the misinformation effect as a function of post-warning participants about the presence of misinformation. They initially established the presence of the misinformation effect under standard conditions. Then, participants were enlightened about the purpose and background of the research, including the presence of misinformation in the post-event narrative (thereby depriving it of its previous credibility), and were tested again (using different test formats in different experiments). In all of the three experiments, the misinformation effect was nullified. That is, people can readjust their memory beliefs and avoid distortion when they realise that previously relied-on external information was biased.

A similar reversal has been demonstrated for stereotype-induced memory distortions (Blank, 2001, Chap. 6). Participants in this study first listened to audiotaped self-descriptions of four target persons (modelled to emulate a dating context). Later they answered multiple choice questions probing items from these descriptions, with stereotypical profession labels (e.g., a librarian or a butcher) provided for two of the four target persons. This resulted in a large stereotype effect in that for labelled target persons more stereotype-consistent false answers were chosen in the memory test. One week later, participants answered the same memory test again but were told beforehand that the professions had been made up and had

nothing to do with the real occupations of these people. This completely removed the stereotype-induced false answers and also increased the number of correct answers again.

The most dramatic reversals (in practical terms) of memory beliefs, however, are found in retractions of childhood sexual abuse memories. Interestingly, in the present context of reality checks for recollections, some of these memories were no longer believed because they did not ‘feel real’ anymore, or because they felt ‘too real’ (to be true; my interpretation) (Ost et al., 2002). Apart from this, the study also found that changes in the social (e.g. therapeutic) setting often contributed to the loss of belief in the abuse memories. In summary, then, memory beliefs have been shown to vary along with the (perceived) reality constraints on relevant recollections.⁷ In the next section, I will put this in a more general perspective.

Keys to the Past - Memory and Reality

In a functional perspective – that is, if memories are supposed to have more than just curiosity value – humans (and other species) need to have reliable knowledge about the past. This is because, in a sufficiently non-random environment, the past gives useful guidance to support our current activities. It usually makes things easier if we remember how to find our way around the London Underground, where we stored important documents, or keep track of encounters with nice or not so nice people (for future reference). It is also useful to keep track of environment changes, as sometimes the system will further change and old knowledge and strategies may become useful again. In a wider social context, culturally shared knowledge about past relations between social groups or nations will undoubtedly help understand and predict current interactions. The latter point also makes clear that knowledge about the past need not come from personal recollection but can draw on oral or written history, or external sources of information in general (as has always been emphasised by the collective memory tradition; e.g. Middleton & Edwards, 1990).

⁷ It is a logical possibility that in these examples not only the memory beliefs but also the recollections themselves varied along with reality constraints. However, in line with research showing higher inertia of recollections than beliefs (Clark et al., 2012; Otgaar et al., 2013), theoretical reviews focussing on beliefs as the locus of memory suggestibility effects (Blank, 2001, 2009; Blank, Walther & Isemann, 2016; Nash et al., 2015), as well as considerations of theoretical parsimony, this logical possibility is not very compelling.

That is, knowledge about the past can principally be based on internal (recollections from our individual memory system) *and* external sources (other people's or externalised, objectified knowledge), and often a combination will prove most reliable (hence the validation of recollections). An interesting question is to what degree we should rely on one or the other source, or in other words how much validation of recollections is needed (with the spectrum ranging, say, from just recognising and accepting a recollection as a memory to agonising over its veracity and spending months trying to find supporting external evidence). This question can be approached considering the memory system as a whole and from the perspective of the remembering individual.

From a memory system perspective, it seems obvious that recollections are typically reliable (i.e. correspond to past reality), or human memory would be useless. My recollections of the London Underground connections would be useless if they didn't bear any resemblance to the actual Underground layout (leaving route changes aside for the moment). This is why so many people stubbornly continue to believe in the reliability and accuracy of their memories (as shown in surveys of the general public; see Ost, Easton, Hope, French & Wright, in press, for a review; see also Niedźwieńska, Neckar & Baran, 2007), despite repeated attempts by cognitive psychologists to convince them of the opposite (but of course the psychologists have a point, too; see Nash & Ost, in press; Schacter, 1999). The people are right, to some degree. There is good reason for them to habitually trust their memory and for memory recollections and beliefs to co-vary (in other words, believed memories are much more frequent than non-believed memories; Mazzoni et al., 2010; Otgaar et al., 2013; Scoboria et al., 2004; 2014).

From the perspective of the remembering individual, the decision as to how much to trust their recollections should depend, at least, on (a) the quality of the recollections, (b) the resources available for validation and (c) how much is at stake. The first point is rather unspectacular; vivid and clear recollections that contain the typical features of representations of real events (see Johnson, 1988; Johnson, Hashtroudi & Lindsay, 1993; Lindsay, 2008; for source/reality monitoring approaches) require less extensive external validation than vague

and uncertain ones. The second and third points link to two-process theories of information processing, first developed in the context of attitude change and persuasive communication and then more broadly adopted in other fields, most commonly under the labels of System 1 and System 2 (see e.g. Evans, 2008, for an overview).⁸

When resources and stakes are low, it seems rational to just rely on one's recollections, in typical System 1 style, with only superficial reality-checking. Conversely, when resources are plenty and stakes are high, extensive System 2-type validation seems more adequate. System 1-type reliance on (clear and vivid) recollections, like most heuristics, will lead to correct outcomes (i.e. accurate memory beliefs) in many cases, as is to be expected from the systemic analysis (i.e. the memory system being a generally reliable reflection of past reality). To increase the accuracy rate beyond this margin, however, more extensive System 2-type validation is required, particularly if the risks associated with misrepresentations of the past are high. I should note, though, that System 1-type remembering need not always rely on one's own recollections only; accepting (trusted) other people's recollections as cues to the past is another option (for instance, in the absence of own recollections). On the whole, however, habitual reliance on one's own recollection should be the default, as they are usually more readily accessible than external evidence that needs to be sought out.

In summary, memory, external reality and beliefs about the past are linked in a systemic way (see Figure 1). The memory system reflects (past) reality, while (current) reality, filtered through one's own and other people's knowledge about it, constrains the output of the memory system. Both recollections and reality thereby shape memory beliefs, and the precise way in which this happens (e.g. System 1- or System 2-style, and also how divergences between internal and external information are negotiated), depends on the quality

⁸ I use the System 1 and System 2 terminology rather loosely, as a shorthand for distinguishing between fast, automatic and unconscious processes on the one hand (System 1) and slow, deliberative and conscious processes on the other hand (System 2); System 1 processes do not require plenty of cognitive resources, but System 2 processes do. These characterisations represent the endpoints of a continuum of processing, and in any given situation there may be a variable mixture of both types of processing. I do not commit to any specific dual-processing model, nor to the idea that these systems physically exist as such (e.g. somewhere in the brain); see Evans' (2008) review for a critical discussion of these issues.

of the information provided from both sources and on the importance of getting past reality right. This is, ultimately, the reason why recollection-belief divergences – a dramatic as they can be (see Mazzoni et al., 2010; Otgaar et al., 2014) – are not malfunctions of the memory system (as one might think initially) but, on the contrary, a sign of healthy social cognition that keeps the memory system aligned with reality.

Memory- and Reality-Driven Divergences – some Ideas for Future Research

As memory beliefs depend on both memory and reality, changes in either of these can drive recollection-belief divergences. As already mentioned, changes in (social) reality are a major driver of abandoned autobiographical memories (Ost et al., 2002; Scoboria et al., 2015). Social influence, however, is certainly not the only reality constraint that can cause beliefs to diverge from recollections. From a developmental perspective, children's evolving world knowledge should cause similar frictions. For instance, at some point children might question their recollections of Santa bringing them Christmas presents, or certainly reinterpret this past occurrence as involving a family member dressed up as Santa, rather than the 'real' Santa (and this in turn may re-shape the recollected features of Santa and the whole scene). Also, it is perhaps no coincidence that the disowning of autobiographical childhood memories typically begins around adolescence (Mazzoni et al., 2010), when young people's world knowledge starts to depart strongly from their childhood beliefs. As a rule, any change in knowledge relevant to the content of recollections has the potential to change the associated memory beliefs.

In addition to changes in (knowledge about) reality, changes in the recollection itself might drive recollection-belief divergences. One important factor should be time and forgetting-related changes in the phenomenological features of recollections (e.g. Crosland, 1921). Over longer periods of time, recollections typically lose the richness of sensory detail that is characteristic of real event memories (Johnson, 1988), and therefore may at some point not 'feel real' any more. This could be compensated for, to some degree, by these recollections being 'semanticised' and integrated – over time and through repeated recollection – into an autobiographical knowledge structure (Linton, 1982). Thus, a loss in

recollective authenticity would be made up through a gain in autobiographical knowledge support, allowing autobiographical memory belief to be sustained for many autobiographical events. For some events (e.g. events that do not fit neatly into one's self-concept), however, this may not be possible to the same degree, and such event recollections may eventually be driven under a 'belief threshold' and be abandoned and/or forgotten. In any case, the relation between forgetting processes and memory validation seems a promising avenue for future research.

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Table 1

Examples of Recollection-Belief Divergences

Phenomenon	Recollection	Belief (illustrations)
Non-believed autobiographical memories	<i>Autobiographical event recollection (incl. details)</i>	<i>“I know this didn’t happen”</i>
Déjà vu	<i>Feeling of recognition</i>	<i>“I know I’ve never been here before”</i>
Misinformation effect	<i>Original event details (e.g. a screwdriver)</i>	<i>“I know from the narrative that it was a hammer”</i>
Childhood sexual abuse memories	<i>(a) Vague, ambiguous or absent recollection (b) (Recovered or false) recollection of abuse</i>	<i>(a) “Now I’m confident that it was sexual abuse” (b) “Now I don’t believe this anymore”</i>
Stereotype influence on memory	<i>Vague, ambiguous or absent details or actions related to a stereotyped group</i>	<i>“I’m confident that the black guy had a knife”</i>

Figure captions

Figure 1. Memory and reality as keys to the past.

Figure 1

