

Incredible Memories — How Accurate are Reports of Anomalous Events?

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Abstract

Psychologists have studied the accuracy of eyewitness testimony for many decades and, more recently, there has been a great deal of research carried out on the topic of false memories. An overview of research in these two areas is presented with a particular focus upon the accuracy of reported memories for anomalous experiences. It has been shown that eyewitness accounts of faked séances and other pseudo-psychic demonstrations are often highly inaccurate. Recent research has also considered memory conformity effects whereby the account of an ostensibly paranormal event provided by one witness can be shown to have an effect upon the accuracy of the report of a co-witness. It is often the case that the degree of memory distortion in such studies is related to the level of paranormal belief. Paranormal belief and the tendency to report ostensibly paranormal experiences have been shown to be correlated with a number of psychological variables which themselves correlate with susceptibility to false memories, including dissociativity, absorption, fantasy proneness, hypnotic susceptibility, and reports of childhood trauma. This suggests that at least some reports of ostensibly paranormal experiences may be based upon false memories. The results of recent studies supporting such a claim will be presented.

Introduction

Ever since records began and in all known societies, people have reported unusual experiences which, taken at face value, would suggest that the current conventional Western scientific world view is at best incomplete and at worst seriously in error. Many of these experiences would today be labelled as 'paranormal' and it is recognised that they are a major factor in explaining the high levels of paranormal belief found even in modern societies (e.g., Blackmore, 1984). The ubiquitous nature of such claims might be taken as evidence that paranormal forces really do exist, but it must always be borne in mind when dealing with such reports that they are almost always mainly dependent upon the memory of the claimant. The issue of the actual degree of accuracy of anecdotal accounts is therefore central in assessing such evidence. French (2003) presented a comprehensive review of the relevance of research into eyewitness testimony and false memories for reports of anomalous experiences. It is the purpose of this paper to summarise and update that review, including the presentation of recent findings from the Anomalistic Psychology Research Unit at Goldsmiths College. The first part of this paper will describe findings from recent studies of eyewitness testimony relating to ostensibly paranormal events, including studies of the effects of verbal suggestion, and misinformation effects, including so-called memory conformity effects. The second part will discuss the relevance of false memory research in assessing reports of anomalous experiences, and discuss various possible interpretations of the empirical link between paranormal belief and experience, childhood trauma, dissociativity and fantasy proneness.

Verbal suggestion and eyewitness testimony for anomalous events

A vast body of experimental literature demonstrates that eyewitness testimony for crimes and other events can often be extremely unreliable even when no deliberate attempt is made to distort the memories of witnesses (e.g., Loftus, 1979). The same is true of witnesses to ostensibly paranormal events. French (2003, p. 157) highlights several factors often associated with such events that would serve to undermine the reliability of honest witnesses including "poor viewing conditions (e.g., darkness or semi-darkness), altered states of consciousness (e.g., due to tiredness, biological trauma, engaging in particular rituals or drug

abuse), emotional arousal, and either the ambiguous and unexpected nature of the event on the one hand (in spontaneous cases) or a high level of expectation and will to believe on the other (e.g., in a séance)".

More recent research by Wiseman and colleagues has explored the effects of verbal suggestion on the reliability of eyewitness accounts of séances and other ostensibly paranormal events, taking their cue from the fact that fraudulent mediums and mentalist conjurors have often described how powerful simple verbal suggestion can be in influencing witnesses' accounts of an event. Wiseman, Greening, and Smith (2003), for example, carried out a fake séance in which an actor suggested that a stationary table was moving. In response to a memory questionnaire, around one third of the observers incorrectly reported that the table had indeed moved, with this tendency being stronger for believers in the paranormal than for disbelievers. In a second experiment, Wiseman and colleagues systematically varied whether the verbal suggestions provided were consistent or inconsistent with the observers' stated attitude towards the paranormal. Believers were found once again to be more susceptible to the effects of suggestion than disbelievers but only when the suggestion was congruent with their stated belief. Overall, around 20% of those taking part in these fake séances reported believing that genuine paranormal phenomena had taken place in the darkened séance room.

Wiseman and Greening (2005) explored the effects of verbal suggestion in another ostensibly paranormal context. Many eyewitnesses to alleged psychokinetic metal-bending attest that not only did they see a metallic object (typically a key or a piece of cutlery) bend while in the hands of the alleged psychic, but that it continued to bend right before their very eyes even when it had been placed on the table in front of them. The claim that the metal continues to bend even when not in contact with the psychic is offered as compelling evidence that a genuinely paranormal effect had taken place, not simply some form of sleight of hand. Wiseman and Greening provide convincing evidence that such a conclusion would be inadvisable given the unreliability of eyewitnesses in this context. They presented participants with a video clip showing a skilled conjuror playing the part of an alleged psychic claiming to use psychokinetic ability to bend a key, although in fact using sleight of hand to achieve the effect. Having bent the key, the psychic then placed it back on the table and the video clip ended with a long close-up of the bent key. Half of the participants then heard the psychic say

that the key was continuing to bend while the other half saw the same footage but without the verbal suggestion. Although the key did not in fact continue to bend, around 40% of the participants in the suggestion condition reported that it did. Only one participant out of 23 reported that the key continued to bend in the no-suggestion condition. A second study replicated this general pattern of results as well as showing that those who reported that the key continued to bend were more confident in their testimony and also less likely to recall the actual verbal suggestion from the fake psychic. Surprisingly, no differences were found between believers in the paranormal and non-believers in terms of their susceptibility to verbal suggestion in this context.

These studies provide an interesting insight into the effects of the hitherto neglected factor of verbal suggestion on eyewitness reliability in an ostensibly paranormal context. Despite the attractiveness of obtaining such results in relatively naturalistic settings, questions remain regarding the mechanisms that underlie the reported effects. It is possible that the verbal suggestion affected either the perception of the event or the observer's memory of the event or both. It is even possible that neither of these explanations is correct and that instead the participants were influenced by the demand characteristics of the situation, i.e., they were simply giving the responses that they believed the investigators wanted to receive. Future investigations should be directed at attempting to determine which of these explanations is correct. However, the visible surprise upon the faces of many witnesses in response to such simple verbal suggestions would suggest that at least some of them do perceive the events in line with the verbal suggestion.

Post-event misinformation and eyewitness testimony for anomalous events

If no attempt is made to influence an eyewitness's memory for an event until after the event has taken place, we can be sure that any effects reported cannot be due to any direct effect upon the perception of the event itself. A number of different techniques have been developed that show the distorting influence of misinformation presented after an event has been witnessed. Memory researchers have been studying such misinformation effects for over 30 years (e.g., Loftus, 1979). What these techniques have in common is that witnesses first observe a complex event such as a staged crime or accident. Half of the participants

are then exposed to misleading information about the event, while the other half are not so exposed. Finally, all participants are tested upon their recall for the original event. Typically, a higher degree of memory distortion is observed amongst the participants exposed to the misinformation.

This approach was employed in a recent study of memory for psychic readings in which we demonstrated that believers in the paranormal are more likely to misremember a psychic reading in such a way that they recall the information provided by the psychic as being more specific than it actually is (K. Wilson & French, submitted, a). Participants were presented with a video clip of an alleged psychic giving a reading to a sitter, followed by another clip in which the sitter comments upon the accuracy of the reading. In fact, both the reading and the post-reading interview were entirely scripted. Two different versions of the video were prepared. Both versions showed identical readings and almost identical post-reading interviews with the sitter, apart from one crucial statement. In one version of the interview the sitter correctly asserts that the psychic “mentioned the name Sheila, and that is my mother’s name”. In the other version, she incorrectly asserts that the psychic “said my mother’s name was Sheila”, making it appear that the psychic was more specific in his utterance than he actually was. We had hypothesised that this post-event misinformation would lead to greater memory distortion on the part of believers than non-believers, given that greater accuracy on the part of the psychic would be congruent with their general belief in psychic ability. In fact, somewhat surprisingly, we found that believers showed a strong tendency to misremember this part of the reading less accurately *whether or not* they received the post-reading misinformation. Non-believers tended to remember the reading more accurately than believers if no misinformation was supplied but, interestingly, their memories were as distorted as the believers’ in the misinformation condition.

We are as interested in investigating possible memory biases on the part of non-believers as we are on the part of believers. We therefore intend to carry out a follow-up experiment using a similar methodology, i.e., scripted reading and post-reading interview. However, in addition to the conditions described above, we would also include a condition in which the sitter makes an incorrect assertion that makes the psychic appear to be *less* accurate and specific than he actually was. The main foci of interest would be (a) to replicate effects found in the first study

using this methodology and (b) to investigate the possibility that non-believers would show greater memory distortion than believers when the post-reading misinformation is congruent with their beliefs.

When attempting to ascertain the reliability of eyewitness accounts in either a forensic context or in an anomalistic context, highly similar accounts from multiple witnesses are understandably taken as being more reliable than either a single uncorroborated account or an account which differs from that of another witness. While such an assumption is probably justifiable, it should always be borne in mind that such accounts may well be influenced by a particularly insidious form of misinformation effect known as memory conformity. When multiple witnesses observe an unusual event such as a crime or a possible sighting of a UFO, a ghost or the Loch Ness Monster, they will be very likely to discuss the event between themselves prior to any formal questioning by investigators. Memory conformity refers to the phenomenon whereby the testimony of one eyewitness directly influences the testimony provided by a second eyewitness (Gabbert, Memon, & Allan, 2003). For example, if pairs of participants are asked to view a video recording of a staged crime and are led to believe that they have both viewed the same video clip when in fact the video clips are subtly different, it can be shown that, following discussion, one witness's account can have a direct influence on that of the co-witness. Thus the first witness may report directly observing actions (such as someone stealing a purse) that were in fact only directly observable on the co-witness's video clip.

As already described, Wiseman and Greening (2005) showed participants a video clip of a key being bent by an alleged psychic who was in fact using sleight of hand. They reported that around 40% of the participants reported that the key continued to bend after it was placed on the table if the psychic simply said, "Look. It's still bending." In the absence of such a suggestion from the psychic, virtually no one reported that the key continued to bend. K. Wilson and French (submitted, b) replicated this basic effect, but also found, in contrast to Wiseman and Greening, that believers were more likely to report that the key carried on bending than non-believers. However, we also went one stage further by adding a memory conformity component to the original experimental design. In addition to the conditions used by Wiseman and Greening, we also included conditions with a stooge present. The stooge either indicated that he did see the key continue to bend or that he saw that the key did not continue to bend. We found that the stooge's

expressed belief about whether the key continued to bend also had an effect on the reports of the genuine participants. Clearly, although the original verbal suggestion may have a direct effect on the witnesses' perception, the subsequent influence of the stooge's expressed belief must be explained in terms of either an effect on memory or demand characteristics. Further experiments investigating memory conformity are planned, using a wider range of ostensibly paranormal events.

False memories and reports of anomalous events

Studies of the unreliability of eyewitness accounts of observed events have been carried out since the early days of scientific psychology and it has long been recognised that details of witnessed events may be lost or distorted in memory. A great deal of research over the last couple of decades, however, has focussed upon the fact that some apparent memories appear to be entirely false; that is to say, they are not based upon any actual event directly witnessed by the claimant at all. French (2003) also considered the relevance of this body of research with respect to reports of anomalous events, especially reports of past-life memories and alien abduction claims (see also, French, 2001; Holden & French, 2002).

A wide range of experimental paradigms have been developed to investigate the factors that lead to the development of false memories although a comprehensive review of these techniques is beyond the scope of the current presentation (see, e.g., Garry & Gerrie, 2005; Loftus, 1997, 2001, 2003; McNally, 2003; Ost, 2005; Smeets, Jelicic, Peters, Candel, Horselenberg, & Merckelbach, 2006). One of the issues that has been the focus of a great deal of attention is the identification of psychological variables that correlate with susceptibility to false memories. A number of such variables have been identified, although it should be noted that there is considerable variability in the findings across studies, possibly reflecting the variation in experimental paradigms employed and other factors. Amongst the variables that appear to correlate with susceptibility to false memories (at least in certain contexts) are fantasy proneness (Spanos, Burgess, & Burgess, 1994), hypnotic suggestibility (e.g., Barnier & McConkey, 1992), dissociativity (e.g., Hyman & Billings, 1998), absorption (e.g., Eisen & Carlson, 1998), and vividness of visual imagery (e.g., Winograd, Peluso, & Glover, 1998). As French (2003) points out, these variables have also been shown to correlate with para-

normal belief and/or tendency to report paranormal experiences (fantasy proneness: e.g., Irwin, 1990, 1991; hypnotic suggestibility: e.g., Kumar & Pekala, 2001; dissociativity: e.g., Wolfradt, 1997; absorption: e.g., Irwin, 1985; vividness of visual imagery: e.g., Diamond & Taft, 1975). This raises the possibility that at least some reports of anomalous experiences may be based upon false memories and that those who report such experiences may be more susceptible to false memories.

Until recently, direct attempts to test the hypothesis that there is a link between susceptibility to false memories and the tendency to report anomalous experiences had met with only limited success (French, 2003), possibly reflecting the use of inappropriate techniques to measure susceptibility to the type of false memories that one might expect to correlate with the tendency to report anomalous experiences. Intuitively, one might expect that techniques that attempt to produce detailed false memories for entire episodes (e.g., Loftus & Pickrell, 1995) might be more relevant than techniques which attempt to produce false memories for, say, individual words in word lists (e.g., Roediger & McDermott, 1995).

It is somewhat surprising then that up until recently one of the few studies to produce results supporting this hypothesis had used the latter type of technique. Clancy, McNally, Schacter, Lenzenweger, and Pitman (2002) used a technique which involves presenting lists of word to participants. Within each list, all words are strongly semantically related to a critical non-presented word. For example, the words *bed*, *pillow*, *snore*, *dream*, *snooze*, and so on might be presented, but not the critical word *sleep*. Subsequently, many participants would incorrectly recall or recognise the word *sleep* as having been on the original list. Clancy et al. used this technique to demonstrate that people with conscious memories of having being abducted by aliens were more susceptible to false memories than either people who believed that they had been abducted by aliens but had no conscious memory of the event or people who did not believe that they had ever been so abducted.

A strong case can be made that false memories are indeed likely to be the explanation for reports of alien abduction and contact, although a number of other factors may also be involved (Clancy, 2005; French, 2001; Holden & French, 2002). Results of a recent study by French, Santomauro, Fox, Hamilton, and Thalbourne (2005) generally support this claim insofar as a group of participants reporting memories of alien contact were found to score more highly than a control group on a number

of variables known to correlate with susceptibility to false memories, including dissociativity, fantasy proneness, tendency to hallucinate, and absorption. However, no differences were found between the experiencers and the control group in this study in terms of susceptibility to false memories as assessed by the same measure as used by Clancy et al. (2002).

Many theoretical models of how false memories are formed would predict that believers in the paranormal would be more susceptible to false memories for ostensibly paranormal events simply because such events would be more plausible for believers than for non-believers. For example, Mazzoni, Loftus, and Kirsch (2001) presented a three-stage model in which, for a false memory to develop: (a) the event in question must be deemed to be plausible, (b) the individual must have good reason to believe that the event is likely to have happened to them personally, and (c) they must interpret their thoughts and fantasies about the event as actual memories (see also Mazzoni & Kirsch, 2002; Scoboria, Mazzoni, Kirsch, & Relyea, 2004). They presented evidence in support of this model by showing that individuals who initially reported that they had not witnessed another individual being possessed subsequently increased their estimate of how likely it was that they had witnessed such an event following interventions designed to increase the subjective plausibility of the event for the participants.

However, given the fact that so many psychological variables that correlate with susceptibility to false memories also correlate with paranormal belief and the tendency to report anomalous experiences, it is possible that believers in the paranormal may show a more general susceptibility to false memories that also encompasses susceptibility to false memories for non-paranormal events. Recent findings from our research unit support such a possibility. K. Wilson and French (2006) had one hundred participants complete a "News Coverage Questionnaire" concerning personal memories of where they were, what they were doing and who they were with when news footage of dramatic news events was first shown on television, as well as asking them to recall details of the footage itself. These news items included four events that are known to have been captured on film and one item concerning non-existent footage of the explosion of a bomb in a nightclub in Bali. Overall, 36% of respondents reported false memories of the alleged footage of the Bali bombing. Participants reporting false memories were found to score significantly higher than those who did not

report such memories on various measures of paranormal belief and experience, supporting the hypothesis that believers in the paranormal may be more susceptible to even non-paranormal false memories than non-believers. We have subsequently replicated this finding with a new sample of participants.

A link with childhood trauma?

The final topic we wish to cover is that of the various possible interpretations of the empirically established link between paranormal belief and experience, dissociativity and fantasy proneness, and reports of childhood trauma. Ever since the early 1990s, psychologists and parapsychologists have known that fantasy proneness correlates with both paranormal belief and tendency to report paranormal experiences (e.g., Irwin, 1990, 1991). Fantasy proneness was first identified by S. C. Wilson and Barber (1983) as being a characteristic of highly hypnotically susceptible individuals. Fantasy-prone individuals spend much of their time engaged in fantasy, have particularly vivid imaginations, sometimes confuse imagination with reality, and report a very high incidence of paranormal experiences. They also are much more likely to report a history of childhood trauma. It has been postulated that fantasy proneness sometimes develops as a defence mechanism to help a child to cope with an on-going aversive situation (e.g., Lynn & Rhue, 1988; Rhue & Lynn, 1987). Fantasy provides an escape from an intolerable situation over which the child has no control into a world of imagination where the child at least has the illusion of control.

Similar arguments have been put forward to explain the association between reports of childhood abuse and tendency to dissociate. Dissociation is defined by the DSM-IV as "A disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment. The disturbance may be sudden or gradual, transient or chronic" (American Psychiatric Association, 1994, p. 766). There are problems with this definition and in practice the term *dissociation* is applied to a wide range of altered states of consciousness. Many therapists believe, however, that dissociative tendencies develop in childhood, again as a defence mechanism to help the child cope with trauma. It is believed that the dissociated state somehow attenuates awareness of the child's stressful circumstances. Indeed, many therapists would view dissociation as being the mechanism responsible for repression of

memories of such experiences, although the concept of repression itself has been questioned by experimental psychologists (see, e.g., McNally, 2003). The issue of whether or not repression ever occurs is beyond the scope of the current presentation. We do know, however, that dissociativity has been found to correlate with retrospective reports of childhood abuse (e.g., Mulder, Beautrais, Joyce, & Fergusson, 1998) and also with reports of ostensibly paranormal experiences and with paranormal belief (e.g., Irwin, 1994; Pekala et al., 1995; see French, 2003, for review). A number of investigators have provided evidence for a direct link between reports of childhood trauma and paranormal belief/experience (e.g., Irwin, 1992, 1993; Lawrence, Edwards, Barraclough, Church, & Hetherington, 1995).

What is the best explanation for the positive relationship between fantasy-proneness, tendency to report paranormal experiences and belief in the paranormal? Sceptics would argue that many claims of paranormal experiences reflect the overactive imaginations of the claimants. People with fantasy-prone personalities have very good imaginations and their claims to paranormal experiences may well reflect such imagination rather than any events that actually occurred. It is, furthermore, widely accepted that one of the most important factors in determining belief in the paranormal is personal experience of ostensibly paranormal events. According to this chain of reasoning, fantasy proneness leads to the experience of ostensibly (but not actually) paranormal events, which in turn leads to belief in the paranormal.

Proponents of the paranormal, on the other hand, have often offered a different explanation of the relationship. They have argued that "fantasy proneness may engender paranormal belief, which in turn may be conducive to parapsychological experience" (Irwin, 1991, p. 321). It is widely believed by proponents of the paranormal that believers are much more likely to experience genuine paranormal events than disbelievers. According to this chain of reasoning then, fantasy proneness leads to belief in the paranormal, which in turn makes that person more likely to experience genuine paranormal phenomena.

A third possibility is that both the reports of ostensibly paranormal experiences and the reports of childhood abuse are based upon false memories, as the measures of childhood abuse used in these studies were retrospective in nature. French and Kerman (1996) presented data comparing fantasy proneness scores and levels of paranormal belief in 23 institutionalised adolescents with reported histories of abuse with

those of 23 well-matched control participants with no known history of abuse. The former group did indeed score higher than the controls, suggesting that the results of studies using retrospective questionnaire measures can probably be accepted at face value. However, the limitations of this study must also be recognised. Although the adolescents had been institutionalised on the basis of alleged abuse, the investigators did not have direct access to documentary proof of such abuse. While it seems reasonable to assume that the institutionalised group would indeed have endured a higher level of actual abuse than the control sample, much more research is needed in this area before definitive conclusions can be drawn.

Of course, the above possibilities are not mutually exclusive. It is conceivable that childhood abuse does indeed lead to increased levels of fantasy proneness and dissociativity and consequently that retrospective reports of abuse have a basis in fact. It may also be the case, however, that this leads to heightened susceptibility to false memories and that *some* of the reported memories of abuse from any particular individual are false, even though others are true. This leaves open the question of whether or not the reported memories of paranormal and related anomalous experiences are based in fact. It is possible that someone may have an increased susceptibility to false memories as a consequence of actual, always-remembered abuse. It would be ironic and tragic, however, that the testimony of such a victim might be severely undermined in the eyes of most psychologists and psychiatrists if it were to be contaminated with false memories for more extreme forms of abuse and/or paranormal experiences. Such considerations underline the extreme caution needed to approach the truth in such cases.

The link between childhood trauma and reports of paranormal experiences merits much more research. Within anomalistic psychology, correlations between variables are often exactly those that one would expect. For example, it is not too surprising that reports of having personally experienced the paranormal are correlated with paranormal belief. But the link with reports of childhood trauma is not one of those intuitively obvious relationships — and yet it seems to be a reliable and robust finding in need of explanation.

Conclusion

The evidence reviewed above and by French (2003) confirms the notion that much is to be gained by considering the implications of research into eyewitness testimony and into false memories when assessing the accuracy of reports of anomalous events. Research into the accuracy of eyewitness testimony, especially for staged pseudo-psychic demonstrations, strongly suggests that such reports should be treated with caution. In addition to the basic unreliability of human memory, factors such as verbal suggestion and post-event misinformation also have a distorting effect upon memory and possibly even the actual perception of such events. In many situations, believers in the paranormal appear to be more susceptible to such memory distortion but more research should be directed at establishing whether belief-congruent biases might also be found in non-believers in appropriate contexts.

With respect to false memory research, recent findings suggest that believers in the paranormal may show greater general susceptibility to false memories, including false memories for non-paranormal events. Future research should be directed at confirming such findings with a wider range of experimental techniques, as well as attempting to distinguish between the various possible explanations for the link between paranormal belief and experience, psychological variables such as fantasy proneness, dissociativity and hypnotic suggestibility, and reports of traumatic childhoods.

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