

# The accuracy of witness testimony and the psychology of investigations

Ula Cartwright-Finch and Alex Waksman of *Herbert Smith Freehills* explore the problems associated with witness testimony when an incident at work leads to an internal investigation. Using insights gleaned from the field of cognitive psychology, they reveal how fragile memory can be, the power of suggestion and the critical nature of (mis)leading questions. Here, they take us through the steps that counsel can take so as to diminish the effects associated with these concerns.

Imagine that a major incident has occurred at your organisation which could lead to litigation, regulatory action, the disciplining of employees, or all three. Perhaps a procurement officer has been accused of soliciting bribes, or a breakdown in safety procedures has caused injuries to members of the public. In such circumstances, corporate counsel typically first investigate internally, interviewing witnesses and reviewing documents to draw initial conclusions which shape the organisation's immediate response.

When planning such an investigation, psychology and behavioural biases might not traditionally feature high-up (if at all) on the list of issues to consider. However, insights from the field of cognitive psychology, including how we understand memory and behaviour, are gaining increasing traction in the business world, and have significant potential for application in the investigations context. Scientific studies have revealed how fragile witnesses' recollections of key events can be, and how the reporting of honestly-held memories can vary according to minor changes in an interviewer's question. Similarly, investigators may become unconsciously 'biased' in their inquiries, which can, in turn, limit the range of possible conclusions that they are open to reaching.

Drawing on experiments carried out by academic researchers, this article highlights some of the key threats to a robust investigation which derive from psychological factors, and suggests a number of techniques that counsel can employ to minimise their effects.

## The fragility of memory

A common misconception is to think of memory as operating like a video recorder through which information can be played back in the same order and form in which it was recorded and stored. In reality, memory is far more fluid; even sincere, mentally capable witnesses can be highly susceptible to forgetting or mis-remembering what they have seen or heard. It has been argued that this has traditionally led to an over-reliance on witness testimony, sometimes with devastating effects: mistaken identification has been cited by one US organisation as the single greatest cause of wrongful convictions in the US, contributing to almost 75 percent of all convictions overturned to date on the basis of DNA evidence that has become available post-conviction.<sup>1</sup>

Moreover, simply making witnesses aware of these problems associated with memory may not be enough to improve their accuracy in reporting an event. In a study examining identity parades, partici-

pants were shown a short video clip of a mock-crime being committed and were later asked if they could identify the suspect in a police-style line-up. For one group of participants, the culprit in the video was present in the subsequent line-up, whereas for another group of participants they were absent. Importantly, before they were asked to study the line-up, half the participants in each group were warned that the individual's appearance may have changed since the event (and may not therefore match precisely the participants' memory of them). What the researchers running the experiment found, perhaps rather surprisingly, was that the 'appearance-change' warning correlated with a higher incidence of mis-identification of the suspect – both where the suspect was present in the line-ups, but also (more worryingly) in suspect-absent line-ups.<sup>2</sup>

It is clear from this result that raising awareness of the potential limitations of our memories is not sufficient to overcome them. Rather, we need to find ways of separating more reliable memories from less reliable ones, or at the very least to be aware of the potential inaccuracies of witness recollections and to accord an appropriate weight to them when drawing conclusions from an investigation.

As the author and scientist Primo Levi

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Ula Cartwright-Finch

once wrote: “*the memories which lie within us are not carved in stone; not only do they tend to become erased as the years go by, but often they change, or even increase by incorporating extraneous features*”.

### Leading and misleading questions

Aside from the potential impact of prior instructions on a witness’ accuracy, it is important to recognise that interviewers’ questions are themselves capable of distorting a witness’ memory depending on how they are worded.

In what has become a classic study<sup>3</sup> in the field of memory research, academics from the University of Washington showed participants clips of road traffic accidents and then asked them to estimate the speed of the cars at the moment of impact. The phrasing of the ‘speed estimate’ question was varied across different groups of participants, in particular as regards the description of the impact. For example, one group was asked how fast the cars were going when they “smashed” into each other, while another group was asked to estimate the speed when the cars “collided”. The verb used appeared to affect the participants’ responses significantly, as follows: smash = 40.5mph; collide = 39.3mph; bump = 38.1mph; hit = 34mph; contact = 31.8mph.

This outcome demonstrates that even witnesses who seek to answer a question accurately are nevertheless susceptible to being led in a particular direction (even unconsciously). This gives us some insight into why courts in a number of

jurisdictions place limits on the way in which questions are put to witnesses during examination-in-chief, such as the requirement in the Hong Kong and English courts that questions must be ‘open’ rather than ‘closed’, or ‘leading’.<sup>4</sup>

In addition to affecting a witness’ estimate of variables such as speed, the wording of a question may also determine whether or not a witness believes that an event occurred at all. In a related experiment, participants were again shown a clip of a road traffic accident, and asked whether they recalled seeing a number of items (some of which were present and others which were not) in the clip. In one instance, the first group of participants were asked ‘Did you see **the** broken headlight?’ (implying that there was, in fact, a headlight in the scene) whereas a second group were asked ‘Did you see **a** broken headlight?’ (implying that there may or may not have been a headlight in the scene) (emphases added). In reality, the film had not featured a broken headlight, but the results showed that the use of the definite article (“the”) in the interviewer’s question made participants more likely to mistakenly report having seen it.<sup>5</sup>

In the context of an investigation, interviewers ought to utilise questions that avoid making assumptions or directing witnesses towards a particular response. Such questions are often found when the interviewer has already reached conclusions as to the likely or expected fact-pattern and is simply seeking confirmation. As we will see below, ‘confirmation bias’ is a separate problem in its own

right, but is particularly powerful when combined with a memory-biasing form of questioning. Add to this an employee who wants to provide ‘helpful’ answers, and there could be serious questions as to how reliable those answers will be.

### Implanted memories

Memory research has not been confined to examining the effects of (mis)leading questions on memory, but has extended to the *implanting* of false memories through positive suggestion. This has come to be known as the ‘misinformation effect’ which occurs when a fabricated event from a witness’ past is suggested to them in such a way that he or she comes to believe that it actually took place. Witnesses thereby incorporate false events into their consciousness, often adding their own embellishments or details to the story.

At one end of the spectrum, researchers have tested the misinformation effect through deliberately manipulating true memories so as to include particular features which could not in fact have been present. An experiment looking into this phenomenon collected a sample of adults who had visited a Disneyland theme park when they were children and showed them multiple (bogus) adverts for the resort featuring Bugs Bunny and nostalgic phrases, such as “Remember The Magic”. In later questioning, the proportion of participants who recalled meeting Bugs Bunny on their trip to the theme park was around 30 percent (rising to 40 percent when a life-size cardboard figurine of the cartoon character was placed in the room). Cartoon aficionados will of course know



Alex Waksman

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that Bugs Bunny is a creation of Warner Bros. and as such would never have been found at a Disney destination.<sup>6</sup>

In more extreme cases, individuals have been convinced through repeated suggestion that traumatic events (which have been entirely concocted by researchers and corroborated by complicit family members) occurred during their childhood, such as undergoing hospitalisation for a minor illness or being lost in a shopping centre. Once the ‘memory’ has been incorporated, the individuals have been able to narrate those (fictitious) events sometimes to a high level of detail.<sup>7</sup>

In the context of an internal investigation, where it may be crucial to identify who was present at a particular meeting, or who spoke and who remained silent, one ought to bear in mind the potential suggestibility of witnesses, especially when a group narrative of the event is developed and repeated.<sup>8</sup>

There are, of course, numerous factors that affect the strength of the misinformation effect, in particular the delay between the event and the recollection, how often the false suggestion is repeated, the perceived expertise of the person making the false suggestion, and potentially the personality of the witness. Nevertheless, the scientific evidence demonstrates that the effect can be a powerful one in corrupting otherwise reliable memories.

### Confirmation bias

Putting to one side questions over witness reliability, in-house and external counsel should also be wary of how their own approach to investigations might prejudice

the results, especially through forming a case theory too early, drawing conclusions before sufficient evidence has been reviewed, or communicating their own perceptions to the interviewee (whether consciously or unconsciously).

For instance, psychologists studying decision theory have discovered an effect which is frequently described as ‘confirmation bias’. This bias represents the tendency to seek out evidence that supports a person’s view and to overlook or discount evidence that contradicts it. There have been a number of suggestions that confirmation bias has played a prominent role in cases of wrongful convictions, and in the apparent reluctance of prosecutors and detectives to consider fresh evidence.<sup>9</sup>

Outside of the legal context, confirmation bias has been tested in the partisan environment of US politics. In one study, students who self-identified as Republicans or Democrats were told that they would be asked to evaluate a number of arguments on gun control laws. The arguments were either made by the Democratic party or Republican party (or by one of two civic groups taking broadly the same stance as those parties), with eight arguments coming from each side.<sup>10</sup> Of these sixteen arguments, participants could choose eight to evaluate in any combination they liked (e.g. four pro-Democrat arguments and four pro-Republican arguments). Participants were not told what the specific arguments would be, but were given an explanation of the general position taken by each of the organisations featured in the study, such that they could anticipate the likely

approach of an argument by virtue of who was making it.

Interestingly, the study found a strong tendency for participants to choose to evaluate arguments with which they would most likely agree (so that, for example, Republican students would tend to choose to evaluate the arguments made the Republican Party). Indeed, around 75 percent of choices made were to evaluate arguments that were likely to confirm their own views. Moreover, participants who were more knowledgeable about the political system (examined through a prior-test of objective facts about the US political system) tended to display this bias more strongly. This suggests that not only do people demonstrate a tendency to seek out information that is likely to confirm their existing hypotheses, but that being more knowledgeable about the relevant context will not alleviate the tendency (indeed, it may even strengthen it).<sup>11</sup>

### Practical interviewing techniques

In light of the specific problems identified here, managing an investigation in a credible and robust way may seem like a daunting task. However, there are certain steps that counsel can take so as to minimise the effects associated with these problems.

First, open questions which use objective terminology and which avoid making assumptions will be the most effective in terms of getting to the root of what the witness actually remembers. Approaching questioning in this way is likely to provide protection against the risk of unintentionally misinforming or misleading the witness.

Second, where an interviewee's memory is particularly weak or vague, it may be worth looking into alternative questioning techniques, such as those espoused by 'cognitive interviewing.' This process involves several unusual features, such as asking the witness to describe seemingly irrelevant details (such as how he or she was feeling at the time or the

physical surroundings) on the basis that memories of relevant events can be associated with such details. A further technique is to change the order in which witnesses are asked to relate the events (e.g. in reverse-chronological order), or to ask them to imagine that they are describing the scene from the perspective of another person who was present.<sup>12</sup>

Third, it is critically important to have in place a thorough document retention process in advance of incidents occurring, and to keep records of important meetings or events. Once an event occurs which triggers an investigation, it is then useful to carry out at least a preliminary document review in advance of any interviews being conducted, both to assess the witness' credibility and strength of memory, and to use retrieved documents as cues that could 'jog' the witness' memory. In addition, looking further ahead to litigation, judges will generally be more inclined to find a witness credible where their testimony is supported by documentary evidence, particularly in light of the shortcomings of memory alone as a source of information.

Finally, persons leading an investigation ought to take measures to insulate themselves from confirmation bias. In some organisations, this may involve a review of draft investigation reports by a person not involved in the case team (and who is therefore unlikely to have formed a hypothesis which they hope to confirm), or seeking input from independent counsel. Awareness and providing reminders to the investigation team of the risks of confirmation bias may also help to alleviate the problem of selective approaches to evidence. Furthermore, having a person present to take a detailed note of the interview will avert the risk of an interviewer only recording answers which confirm his or her preconceptions.

**Footnotes:**

1. Research carried out by the Innocence Project, a non-profit organisation based in New York.
2. Charman, S.D., and Wells, G.L. (2007), *Eyewitness Lineups: Is the Appearance-Change Instruction a Good Idea?* Law and Human Behavior, Vol. 31, pp.3-22.
3. Loftus, E. F., & Palmer, J. C. (1974), *Reconstruction of automobile destruction: an example of the interaction between language and memory*, Journal of Verbal Learning and Verbal Behavior, Vol. 13, pp.585-589.
4. In brief, 'open' questions invite a range of possible responses, whereas 'closed' questions are only capable of being answered by words such as 'yes' or 'no,' such that the possible responses are limited. Hence the question "what did you see at the crime scene?" would be open, whereas "did you see the accused at the crime scene?" would be closed.
5. Loftus, E. F., and Zanni, G. (1975), *Eyewitness testimony: the influence of the wording of a question*, Bulletin of the Psychonomic Society, Vol. 5, pp.86-88.
6. Pickrell, J.E. and Loftus, E.F. discussed in Science Daily (12 June 2001). Although several variations on this experiment have been conducted, a key paper is: Braun K.A., Ellis R., and Loftus E.F. (2002), *Make My Memory: How Advertising Can Change Our Memories of the Past*, Psychology and Marketing, Vol. 19, pp.1-23.
7. See, for example, Loftus, E. F., and Pickrell, J.E. (1995), *The Formation of False Memories*, Psychiatric Annals, Vol.25, pp.720-725.
8. Various studies suggest that conversations regarding an event that numerous witnesses perceived differently have the potential to corrupt at least one of the witnesses' memories. This effect can be particularly strong where there is a dominant voice in the conversation. See Coman, A., Brown, A.D., and Koppel, J. (2009), *Collective Memory from a Psychological Perspective*, International Journal of Politics, Culture, and Society, Vol. 22, 125-141, at pp.131-134.
9. See Burke, A. (2007), *Neutralizing Cognitive Bias: An Invitation to Prosecutors*, Legal Studies Research Paper Series, No. 07-4.
10. The civic groups were Citizens Against Handguns (Democratic stance) and the National Rifle Association (Republican stance). Four arguments were taken from each of the groups and from each of the political parties used in the study.
11. Taber, C.S., and Lodge, M.L. (2006), *Motivated Skepticism in the Evaluation of Political Beliefs*, American Journal of Political Science, Vol. 50, pp.755-769.
12. For a useful introduction to this technique, see *Cognitive Interviewing: A "How To" Guide (1999)*, developed by the Research Triangle Institute (now 'RTI International').

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