

Leading questions and the eyewitness report



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Elizabeth Loftus is a prominent figure in the research into eyewitness report. Although not the first of her career, the 1975 paper entitled Leading Questions and the Eyewitness Report is the first in a long line of research based on the effect of question wording and information on eyewitness memory. Validating the study, Loftus presses for 'socially important forms of memory research', highlighting how prior experiments are based around recollection of word lists with little emotive and social context. The 1975 study aimed to explore the effect of question wording on answers to future questions, through four experiments. Questions were formed as presuppositions i. e. "did you see the children getting on the school bus" implies there was a bus was present. A three stage methodology was used; participants were shown a short film before being administered questionnaires containing presuppositions and control questions. Finally participants completed another questionnaire regarding their memory of the original event.

The first experiment involved the presupposition of a 'stop' sign in an automobile accident, with findings implicating how the presupposing question affected answers to subsequent questions. A false presumption and weeklong interval between the original incident and post-event information were assessed in experiment 2. When asked to recall the number of demonstrators in a video, those receiving a questionnaire presuming more people later recalled on average a higher number. Loftus concluded that false information could thus also affect the original memory. When a barn was presupposed in relation to an automobile accident, it became apparent that results could further be generalised to the false presupposition of

objects too. In the final experiment Loftus wanted to remove the possibility of word familiarity as a cause for these findings, here post-event information encompassed direct questions, false presuppositions or no key questions and a significant difference was found between memory accuracy of direct questions and false presupposition groups. Thus, previous results were not attributed to word prompting or familiarity.

Loftus ended her paper by theorising mechanisms causing these effects. Primarily she offered a 'strengthening hypothesis' (repetition of information enforces the original memory) although later dissuaded but did not exclude this idea due to the false presupposition effect. She suggested her research findings could advocate a 'construction' hypothesis (the original memory is reconstructed to include new information). Loftus concluded that our memories are 'malleable' and susceptible to integration with any subsequent information we are exposed to.

Loftus's role in the development of EWR research is hard to dispute. The current review will argue that her 1975 study, although seemingly under-acknowledged, in fact formed the foundations of subsequent research into language and information in EWR. Due to the broad expansion of interest since the original paper, this review will primarily focus on the development of post-event information for adults as identified in the original study, reviewing the development of concept, theory and methodology in the field.

It has been over a century since interest into factors affecting memory in law first began (Ainsworth, 1998), coinciding with development of early memory theories (Lloyd-Bostock & Clifford, 1983). Loftus was not the first to assess

how question wording can consequently affect an answer, something originally proposed by Whipple (1909) at the turn of the century. Although general memory theories developed over the next few decades, it appears that Loftus and Palmer (1974) were the first to re-establish interest in factors affecting our memories of real life events. However, from reading this research, it is apparent that the renowned effect of a simple presupposing word; ' the' or ' a', was almost stumbled upon whilst researching speed estimations for the Department of Transport. Although this research was critical in reviving interest to the forensic application of memory research, Loftus herself acknowledges that it was her 1975 study which formed the basis of future research around EWR (Loftus, 2011).

From reviewing the vast research since the 1975 study, it is apparent that this false presupposition or ' misinformation' effect is highly evidenced in both old and new research alike (Lee & Chen, 2013; Loftus, Miller & Burns, 1978; Pezdek, Sperry & Owens, 2007). With little controversy around the existence of the effect itself since it was first acknowledged in 1975, subsequent research has predominantly considered any factors which may exacerbate the effect. Longer time intervals between original memory and misinformation exposure, and the test recognition phase were found to reduce accuracy, attributed to greater opportunity for memory fading and misleading information exposure (Brewer, Weber & Semmler, 2005; Loftus et al., 1978). After criticising Loftus (1975) for assessing only peripheral memories, Sutherland and Hayne (2001) found that the misinformation effect was sufficiently reduced when memories central to the incident were assessed, implying the original findings of the false information effect

(Loftus, 1975) to be exaggerated. McCloskey and Zaragoza (1985) also felt the 1975 results were an amplification of true findings caused demand characteristics. In removing the possibility of this explanation, subsequent research found the warning of participants that information may not be correct, as effective, but only when provided before to the contrary information (Loftus, 2005).

Importantly, there is no evidence of post-event information leading to 100% reduction in memory accuracy (Ainsworth, 1998) causing some researchers to use the original method to assess individual characteristics. Cognitive ability testing resulted in mixed findings of a relationship between IQ and suggestibility (Powers, Andriks & Loftus, 1979; Zhu et al., 2010) and a complex role of gender concluded the effects of misinformation to be dependent on whether questions were directed at a point of interest for the individual (Powers et al., 1979). Individual suggestibility was tested through the plausibility of misinformation (Loftus & Hoffman, 1989), with 15-27% of participants in a similar study genuinely believing they had observed the false information (Manning & Loftus, 1996). Importantly, this area of research has failed to establish any concrete relationships, leading some to conclude that no-one is completely 'safe' from these effects (Frenda, Nichols & Loftus, 2011).

Although the effect itself is well established, there has been great debate as to the how and why it occurs (Ainsworth, 1998; Powers et al., 1979). Loftus (1975) initially offered two theories; the 'strengthening' and 'construction' hypotheses, of which the 'construction' hypothesis involving the integration of old and new memory best explained her research findings. McCloskey and

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Zaragoza (1985) later described such a theory as ambiguous, failing to explain the processes involved. In further theoretical development, Loftus et al., (1978) assessed whether original memories were supplemented, or whether post-event information merely creates a memory where there was not one before. Over half of the participants in the research were able to draw their original memories, although the authors rightly acknowledged that this only implied original memory encoding, not what happens after exposure to misleading information.

Loftus and Loftus (1980) outlined the use of incentives for accurate recall and second chance guesses as a means to establish whether the original and new information are stored alongside one another. Contrasting previous theory they concluded that a 'substitution' theory where original memory is overwritten was more likely. It is evident at the point that a non-permanent concept of memory had been adopted (Ainsworth, 1998). One must argue as McCloskey and Zaragoza (1985) later do, that such an assumption is ungrounded; just because evidence of the original memory is limited it does not mean it is completely lost through misinformation. Perhaps a safer explanation due to the lack of definitive evidence is that the original memory merely becomes inaccessible with exposure to subsequent information (McCloskey & Zaragoza, 1985).

The existence of the original memory still remains un-established even through use of more implicit and subtle memory tests, findings still remained inconclusive (Manning & Loftus, 1996). It would appear then after decades of research that the field is no further in understanding mechanisms causing the effect (Sutherland & Hayne, 2001) than it was in 1975.

Clearly the theoretical expansion of research is extensive, and it appears the same can be said for the 3 stage methodology established in the original study now seen as the 'standard test procedure' for post-event information (Sutherland & Hayne, 2001). The unacknowledged limitations of this original methodology have unfortunately been replicated in subsequent research (Frenda et al., 2011).

The matching presentation of misinformation and test recognition phases (i.e. through questionnaires) is believed to have attributed to the high levels of misinformation effect established in 1975 (Johnson, Hashtroudi & Lindsay, 1993). In line with 'source monitoring' theories, if the original exposure is presented visually then the memory should be assessed in the same form, one of the few adaptations made to the original methodology (Loftus et al., 1978). This decision is supported by current neuro-imaging research where visual and verbal information activated alternative brain areas when testing for the misinformation effect (Stark, Okado & Loftus, 2010). Little distinction was found in test recognition accuracy between control and misinformation groups, however this research is still in its early stages (Frenda et al., 2011) it is hoped it will establish underlying mechanisms of the concept in the future.

Other limitations of Loftus (1975) have been identified in subsequent research; the lab based methodology (Wells & Olson, 2003), testing of single memories of single events (Brewer et al., 2005), and the use of photo slides and videos to present the original incident are all seen as not 'forensically relevant' (Yuille & Cutshall, 1986). Surprisingly, these limitations are prominent when reviewing the research, an inadequacy perfectly highlighted

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by the 92% of participants found to be students when 8 years of EWR research was reviewed (Wells & Olson, 2003). Although the 1975 methodology has a seemingly long trajectory; factors within it have failed to be developed to account for these limitations. Wells and Olson (2003) is the only research to utilise real witnesses of a shooting to test presupposing questions on. As a significant effect of misinformation failed to be established, the apprehension of the forensic field to generalise these laboratory findings is unsurprising.

Combining research of concept and theory it is promising to see the contribution it has made to the development of the 'cognitive interview', a guideline of interviewing techniques designed to reduce the effect of post-event information (Fisher & Geiselman, 1992; Memon, Zaragoza, Clifford & Kidd, 2009) ; a real life application of the research started by Loftus in 1975.

Overall it is clear that Loftus (1975) influenced the forensic field in a number of ways. Although some may feel that Loftus and Palmer (1974) reinitiated the interest of EWR and memory, the trajectory of the 1975 paper can be seen in the development of both the concept and theory of misinformation and its methodology which is still used in research today. The study closed the gap between memory theories and their application in forensic settings. It is surprising then that this piece of research fails to be recognised as much as its 1974 and 1978 counterparts.

Prominent themes from the original study have continued to be established and developed as part of the research journey; the role of question formation and presuppositions (Wells & Olson, 2003) and the effect of exposure to false

information (Loftus et al., 1978; Manning & Loftus, 1996) subsequently developing into the mis-information effect. The original 1975 methodology can be seen today with only slight adaptations after nearly 40 years (Lee & Chen, 2013), although unfortunately the limitations of this original method have also been replicated. The wholesome nature of Loftus' research is evident at the end of her 1975 study where even at these early stages, she theorises about mechanisms underlying this effect. Although it would appear development of this research has been limited by the lack of definitive evidence for these theories (Brewer et al., 2005) which still have a long way to go (Wells & Olson, 2003).

It is clear that the field of forensic psychology must be extremely grateful for Loftus' 1975 research, as although methodologically limited, it provided the basis of information around the post-event information and factors affecting EWR that are still being assessed today. As a well established concept, future research must aim to primarily understand underlying mechanisms, establishing methods to reduce the consequences of such effects as much as possible (Manning & Loftus, 1996). Real life application and testing of EWR could help to breach the gap between this laboratory based research and application to real forensic settings. Even though it is now seen as a fundamental fact that EWR is unreliable and malleable (Ainsworth, 1998; Frenda et al., 2011; McCloskey & Zaragoza, 1985) jurors are largely unaware of these inaccuracies in testimony (Yuille & Cutshall, 1986). Resultantly there is still a great pressure on witnesses to tell '...the whole truth and nothing but the truth' (Ainsworth, 2000), which nearly 40 years of research has shown is just not fundamentally possible.