False memories and false confessions: the psychology of imagined crimes

Julia Shaw uses science to prove that some memories are false. Now she's tackling criminal-justice failures

In February 2016, Julia Shaw received a call from a lawyer regarding a criminal case. It involved two sisters who, in 2015, had given the police vivid descriptions of being sexually abused by a close female relative. They alleged that the abuse had taken place between 1975 and 1976. The lawyer, who was representing the defendant, wanted Shaw's input as an expert witness.

Shaw, a criminal psychologist at the London South Bank University, was struck by how unusual the scenario was. "Usually, in cases of sexual abuse, the father is the accused," she says. "In this case, it was a girl." At the time of the alleged abuse, the sisters had been around four and seven years old, and the relative was between ten and 12.

As she leafed through the interview transcripts, Shaw noted the older sister's language. "She kept saying, 'My childhood was rough and I buried so much. I think it was my coping mechanism, I must have just blocked it.' These are things that point to an assumption of repression. This is the idea that if something bad happens, you can hide it in a corner of your brain," she says.

The older sister also told police that her recollection was unearthed suddenly by a photograph that her relative had posted on Facebook, triggering memories of a few instances when they were repeatedly made to perform sexual acts in an upstairs room of the family home. The younger sister told police that she couldn't remember most of what had occurred, but agreed with her sibling's version of events. To Shaw, this indicated social contagion: when testimonies are tainted, or even formed, by others' accounts of what happened. "The transcript also gave the impression that the [first] complainant was at times also comfortable with
guessing memory details, saying, for example, 'I can't remember, I just had this really weird feeling that she used to make us do stuff to each other,'" Shaw recounts.

Taking into account the claims of repressed memory, the 40 years that elapsed between the alleged crime and the accusation, and the memory sharing between the two sisters, Shaw could reach only one conclusion: although the two sisters were probably convinced of the veracity of their allegations, their accounts weren't reliable. "I don't try to figure out if a person is guilty or innocent," Shaw says. "It's about whether the memory is reliable or not."

The case was eventually dropped due to new evidence that the defendant provided in court. Now, the defendant is trying to put the ordeal behind her. "I like being the person to say, 'actually, this is bad evidence,' if it is," Shaw says. "That's something you can't do if you don't know the science."

As a researcher, Shaw studies how false memories arise in the brain and applies it to the criminal-justice system. Contrary to what many believe, human memories are malleable, open to suggestion and often unintentionally false. "False memories are everywhere," she says. "In everyday situations we don't really notice or care that they're happening. We call them mistakes, or say we misremember things." In the criminal-justice system, however, they can have grave consequences.

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When Shaw works on cases she systematically looks for red flags. Cues such as age are important. For instance, before we reach the age of three, our brains cannot form memories that last into adulthood, meaning that claimed recollections from that period are suspect.

She also investigates who the accuser was with when they recalled the memory, what questions they were asked and whether in other circumstances, such as therapy, somebody could feasibly have planted the seed of a memory that took root in their minds.

Finally, Shaw looks for claims that the memory resurfaced suddenly, out of the blue, which can point to repressed memories. It's a discredited Freudian concept that supports the premise that dredging up supposedly forgotten memories can explain a person's psychological and emotional turmoil, but scientifically, it's unsubstantiated.

Understanding the ramifications of memory-gone-wrong drives Shaw. She believes that a limited awareness of memory research in therapy, policing and law is contributing to
systemic failures, and is training the German police on improving interrogation methods. She wants to eradicate the misconceptions about memory. "We've done things that people in policing or law don't understand," she says. "An academic journal has ten people reading it. We're doing this to have an impact."

Allegations of sex abuse and satanic rituals hit the McMartin Preschool in Manhattan Beach, California, involving Peggy McMartin Buckey. Accusations by a mother that her child had been sodomised snowballed into an investigation, with allegations from hundreds of pupils. In 1990, these convictions were overturned as it was judged that therapists had unintentionally implanted false memories in the preschoolers' minds.

A letter written to Julia Shaw from UK housing benefit consultant John Zebedee detailing the events which caused him to murder his father in 2011, after a sexual abuse flashback. He now believes the memory to be false

Credit Sebastian Nevols

In 1989, Eileen Franklin-Lipsker, a woman living in Canoga Park, Los Angeles, was gazing at her young daughter, Jessica, when a series of disturbing memories rushed into her mind. In them, she witnessed her father, George Franklin, raping her eight-year-old friend Susan Nason in the back of his van, then crushing her skull with a rock. Nason had been missing since 1969: her body was discovered three months later in the woods outside Foster City, California, where she'd lived. But the murderer was never found. Disturbed by these memories, Franklin-Lipsker called the police. She told detectives on November 25, 1989, that 20 years earlier, her father ditched Nason's body beneath a mattress in the woods and threatened to kill her if she told anyone. She claimed that she'd repressed the shocking memory for two decades. Her recollection became the basis of an indictment against George Franklin, resulting in his trial.
In late 1990, when the trial was under way, Elizabeth Loftus, a cognitive psychologist at the University of California, Irvine, received a telephone call from Franklin's attorney, Doug Horngard. He wanted her as an expert witness for the defence. Loftus had been studying memory for more than 20 years and had testified in several previous criminal cases. "What was puzzling to me was that [Franklin-Lipsker] kept changing her testimony," Loftus recalls. "She had maybe five or six different versions of how her memory came back." To Loftus, that signalled distorted or even fabricated memories.

In court on November 20, 1990, Loftus spent two hours explaining to the jury that memories are suggestible, and that Franklin-Lipsker's might not be as reliable as it seemed. Nevertheless, Franklin was convicted of Nason's murder later that month. "I was shocked at the conviction," Loftus says.

Five years later the courts agreed with Loftus. Franklin-Lipsker's sibling, Janice, testified that her sister had recovered the memories during hypnotherapy sessions that she had been attending to alleviate the depression she had suffered from since her teens. During those sessions, Franklin-Lipsker learned that her symptoms could indicate post-traumatic stress disorder, and was encouraged to recall the trigger. That, according to Loftus, originated the false memory. Hypnosis is considered an unreliable source by US and UK courts, so made her accounts inadmissible. Since Franklin's imprisonment rested on his daughter's eyewitness account, the judge overturned his conviction and he was freed.

CASE STUDY ONE

1984-1990: MCMARTIN PRESCHOOL TRIAL

Allegations of sex abuse and satanic rituals hit the McMartin Preschool in Manhattan Beach, California, involving Peggy McMartin Buckey. Accusations by a mother that her child had been sodomised snowballed into an
investigation, with allegations from hundreds of pupils. In 1990, these convictions were overturned as it was judged that therapists had unintentionally implanted false memories in the preschoolers' minds.

Loftus's involvement in the case spurred her to pioneer research into false memory. In the 80s and 90s, she'd become intrigued by an upsurge in allegations of sexual abuse. The idea of repressed-memory theory was gaining traction at the time in alternative practices such as hypnotherapy and psychotherapy. Patients were encouraged to embrace visualising techniques, hypnotism and their imaginations to access repressed memories, which were usually pinpointed as violent sexual and physical abuse during childhood. "You began to see hundreds of people coming forward, saying that they had recovered repressed memories of massive brutalisation that they'd been completely unaware of," Loftus says. "I saw that something really big was going on here. It seemed that richly detailed whole memories were being planted into the minds of ordinary people [in therapy]."

"For the time, the notion was hugely controversial", Shaw says. "It was absolutely shocking. Loftus was accused of silencing victims and was verbally attacked. I also get attacked when I speak out against repressed-memory therapies. But people like Elizabeth [Loftus] and I are concerned that this has the potential to really damage lives."

In 1995 - the year Franklin's case ended - Loftus tested out her theory experimentally. Working with graduate student Jacqueline Pickrell, she recruited 24 participants and gave each of them booklets containing details of four experiences they'd had between the ages of four and six. Researchers contacted each participant's parents for details of three true stories. The fourth story, however, was false: it involved an imaginary incident where the subject got lost in a shopping centre as a child, was rescued by a stranger and returned to their parents. To make it believable, Loftus asked the participants' parents for details that could have been true - such as the name of a local shopping centre that actually existed when the participants were young. They were asked to think about the four memories and write down as many details as they recalled. When interviewed about their recollections, some began to share how they'd felt, and even what their rescuer was wearing - despite the fact that it was all untrue. "It was groundbreaking, because it showed that we can implant false memories of entire experiences. That's something we hadn't done before in the lab," says Shaw.

Elizabeth Loftus

Credit Jodi Hilton/REX/Shutterstock
CASE STUDY TWO

1984 - JOSEPH PACELY

In 1984, police arrested a man named Joseph Pacely in California because he matched the description of a suspect who'd broken into a woman's home and tried to rape her, but fled when others in the house were woken by the noise. The woman, known as Mrs M, identified Pacely from a line-up. But testifying on his behalf, cognitive psychologist and memory expert Elizabeth Loftus explained that cross-race misidentification is common (the accuser was Mexican), and that stress distorts memory. Pacely was acquitted, due to Loftus's evidence.

Ultimately, a quarter of the participants in Loftus's study developed a detailed false memory. "The key is suggestibility. Often, false memories develop because there's exposure to external suggestive information," Loftus says. "Or, people can suggest things to themselves - autosuggestion. People draw inferences about what might have happened. Those solidify and act like false memories."

"A lot of people were studying memory errors at the time, but they weren't making it useful," says Shaw. "Elizabeth structured it in a way that people could take it into a courtroom."

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Julia Shaw in her London office working on a research paper about false memory issues in historical child abuse cases

Credit Sebastian Nevols
One morning in February 2016, Shaw sat cross-legged in the swivel chair at her desk, in the department of Law and Social Sciences at London South Bank University, where she is a senior lecturer in criminology. A petite 30-year-old, Shaw talks eagerly about her work, in a flurry of words punctuated by the occasional impatient flick of her long blonde hair over a shoulder. Her interest in memory science took hold in her teens, when she began to research her family history. Half-German, half-Canadian, Shaw was born in Cologne, Germany, and spent most of her youth moving between her birthplace, the German city of Bonn, and Vancouver, Canada. "I grew up in a family where some people had difficulty monitoring reality and struggled with mental-health issues. I knew from an early age that reality could be dramatically different for people," she says. Shaw is the first in her family to finish a degree: in 2004, she started studying psychology at the Vancouver campus of Simon Fraser University (SFU). "I didn't know exactly what I was there for. I just knew that some of my family had alternate realities. I wanted to understand that."

Shaw has idolised Elizabeth Loftus since her university days. "There aren't that many women at the top of our field. When I started studying psychology, she was one of the most important," she says. Her interests were influenced by Loftus's memory-implantation studies. In 2009, while moving from SFU to the University of British Columbia to conduct her PhD, Shaw became increasingly fascinated by the impact that false memories could have in criminal scenarios.

The idea that memory science can help with police questioning is based on evidence that's been growing since the late 80s. "Studies show that the subtle ways a question is pitched can affect what a witness reports. The feedback you give to a witness can modify how confident they are in their memories, and can shape those recollections," says Kimberly Wade, a psychologist at the University of Warwick who carries out false-memory research. Ultimately, poor interrogation methods can lead to mistaken eyewitness accounts, baseless accusations and even false confessions. "Why do people confess to things they never did? I think the most fascinating examples aren't because of torture or because they felt like they had to, but because they actually think they did it," Shaw says.

In 2015, Shaw set out to discover if she could implant detailed memories of committing a crime in people's minds, as a proxy for understanding how real-world false confessions arise. To do that, she used an updated version of Loftus's shopping-centre experiment. With her former PhD adviser Stephen Porter, a forensic psychologist at the University of British Columbia, Shaw recruited 60 student participants, splitting them into two groups. The first was told they'd experienced an event as teenagers, such as an injury, a dog attack, or losing a large sum of money. The second was told they'd committed a crime, such as assault or theft, as teenagers. To make the memories more convincing, Shaw wove in autobiographical information from the participants' parents - such as where they were living, and the name of a friend that the participant had at the age they'd supposedly committed the crime.

After the initial meeting, none of the participants could recall the false memory. But every night for three weeks, they were encouraged to spend a few minutes visualising the event. Adding some social manipulation, Shaw told them most people can recall memories, but only if they try hard enough.

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Kevin Felstead, Director of communications at BFMS

Shaw recalls the moment she realised her experiment was working. An important cue that a false memory is taking hold is the richness of the reported detail: "I had a participant who was doing my guided imagery exercise; it seems so trivial but she said, 'Blue sky, I see a blue sky.' It showed that she was buying into the idea of actually experiencing this event and was accessing a memory, as opposed to her imagination. Those were the kinds of details that ended up being the foundation for the event itself."

The combination - a seemingly incontrovertible story backed up by real autobiographical details, visualisation and performance pressure - resulted in 70 per cent of participants generating a rich false memory of the event. Previous implantation studies had rates of 35 per cent. Unexpectedly, participants were as receptive to the false memories of committing crimes as they were to the emotional ones, Shaw says, despite the assumption that people would find it harder to believe they'd acted criminally in the past.

Shaw uses the study as proof of memory's fallibility. "I always go through the study when I talk to police," she says. "They see themselves in that scenario and think 'this could be me, implanting false memories in a witness or a suspect.'"

Shaw, who is fluent in German, works mostly with German police and military forces. With the police, she typically trains senior police officers, who in turn pass on what they've learned to their subordinates at police stations across the country. In November 2016, she lectured an auditorium of 220 police officers in the Police Academy of Lower Saxony in Nienburg, Germany. As always, she started with a grounding of memory science to explain how memories fail. "It's really important to tell them not just what to do, but why. I think having that knowledge makes police much better at their jobs," Shaw says. Then she shared practical tools to help them avoid the development of false memories during criminal cases: get your witness statements early, she told them, so memories don't get muddied by time; keep people's accounts of an event separate so they don't influence each other; avoid leading questions during interrogations.

Shaw also stressed the importance of filming witness and suspect interviews, which isn't widely practiced in Germany. "It improves the outcome because police officers are more cautious about how they ask questions," she explains. It also creates an independent record so that if there are suspicions of a false memory, the police's interrogation methods can be scrutinised, she says.
During therapy sessions she undertook in 1990, a 19-year-old Californian girl named Holly Ramona began to recall being abused by her father. Her memories were aided by doses of sodium amytal - so-called "truth serum" - known to make people believe they're recalling real events. Her father successfully sued the therapists for negligence in 1994, and was the first case to find therapists guilty of implanting false memories.

After the lecture, Shaw received a rare confirmation that her lessons are beginning to take hold. A police officer approached her and said that, back at her station, she would now set up mandatory videotaping for witness statements.

Of her work with the military, she says these ideas can be a tougher sell. "There are always one or two people, usually older men, who will just come at me with anecdotes such as 'I remember being born,' or 'I have memories of my childhood, so this proves you wrong.' I say to them, 'your anecdote doesn't really battle my science,'" Shaw teaches the German military's intelligence officers biannually: her focus is helping officers understand the flaws in their own memory so they can gather more reliable intelligence. "I teach them that you can be highly confident in things that are wrong. So you need to be careful. You're making security decisions based on information that you can't write down while you're gathering intelligence."

She's also campaigning against the military's tendency towards debriefings. In conflict situations, everyone will come back and they'll immediately debrief," Shaw says. "But a big briefing error is to all share your memories, because then they all become one. You lose all the nuances."

Recently, Shaw was informed by her trainees that the military is ditching the joint debriefing habit in favour of officers independently recording their memories right after they've been in
the field. "I also found out that my book was a Christmas present for those I work with on the base," she laughs.

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What makes our memories so susceptible comes down to the way the brain stores information. That's encapsulated by a concept called Fuzzy-trace theory, first described in the 90s by American psychologists Charles Brainerd and Valerie Reyna. The theory suggests that our brains lay down memories in two forms: gist and verbatim-memory traces. Gist traces record broad features of an event; verbatim traces store precise details. "The verbatim is exact, and the gist is general," Shaw says. So, verbatim traces record a person's eye colour and name, while the gist traces register how well you got on and whether you liked them.
Memory distortions arise because the brain stores and recalls these types of information independently, according to the theory. Since gist memories are also longer-lasting and more reliable over time than verbatim, that leads to memory cross-speak. Shaw explains in her book, *The Memory Illusion*: "When the gist traces are strong, they can encourage what are called phantom recollective experiences, which take the familiarity of the gist as a good cue for verbatim interpretations."

**CASE STUDY FOUR**

**2015 - LUCY X AND EDWARD HEATH**

In August 2015, the UK police launched an investigation into the alleged paedophilia of deceased former UK prime minister Edward Heath (left). At the heart of this allegation was a woman, "Lucy X" who, investigating criminologist Rachel Hoskins has since discovered, underwent psychotherapy and hypnosis, which may have fuelled her allegations. In March 2017, police shut down the inquiry - which had cost more than £1 million in taxpayer's money - reportedly due to insufficient evidence.

We don't generally remember the verbatim pieces of a lot of things, according to Shaw, "so when we need to recall verbatim, it can lead to confabulation - assuming pieces that weren't originally there. We embellish our gist memories." These embellishments may come from other people's accounts, our own imaginations or what we're currently experiencing - all conniving to alter our sense of objective reality. "As a general rule, memory is a reconstructive thing," says Deryn Strange, associate professor of cognitive psychology at the John Jay College of Criminal Justice at The City University of New York. "So we are not able to play back any moment in our past and expect it to be an accurate record of what happened."

In June 2016, Shaw crammed herself, two PhD students and four boxes into her Mini. They were returning to London from the headquarters of the British False Memory Society (BFMS) outside Birmingham. The organisation helps people who have been accused of crimes they claim they didn't commit. The boxes Shaw was transporting contained the photocopies of thousands of carefully redacted files - call transcripts, court reports and psychiatric records - which describe the approximately 2,500 false memory cases the BFMS has amassed since 1993.

Shaw and Kevin Felstead, director of communications at BFMS, are using the dataset to identify how false memories form and evolve over time. Their survey has also revealed several features that allegations have in common: usually the accuser is known to the accused; the claims principally involve alleged sexual abuse; and most accusers are undergoing questionable therapy. "People seeking therapy are vulnerable, and they're looking for answers," Shaw says. "So if the therapist says 'You must have repressed something,' they say, 'Let's go find it.'"

Across the survey, the spectre of bad therapy looms large, usually represented by hypnotherapists and psychotherapists who embrace repressed-memory techniques. "There are still psychoanalytic schools saying repression is something we need to look for. So we've got universities teaching this nonsense to people," Shaw says. The BFMS is slowly building up a therapy blacklist, so that professionals who turn up repeatedly can be identified. "I think,
right now, we have a Wild West of therapeutic methods that are applied. Just like not everybody can call themselves a medical doctor, I don't think anyone should be able to say they can help with mental health," Shaw says.

Kevin Felstead from the British False Memory Society collaborated with Julia Shaw

Credit Sebastian Nevols

Another facet to the problem is what Felstead calls the "post-Savile effect". In 2012, revelations of sexual abuse experienced by hundreds of people by at the hands of Jimmy Savile raised the profile of sexual-abuse victims. "The criminal justice system has historically let down victims," Felstead says. "Victims had terrible ordeals in those courtrooms. Nobody believed them, and they were ridiculed. Since Savile, it's gone in the opposite direction."

People who allege sexual abuse are frequently referred to as victims from the start. "Inquiries into historic sexual abuse also refer to people as survivors," Shaw says. In 2016, London's Metropolitan police force was criticised for adopting a policy stating that anyone who made a sexual-abuse allegation would be believed. "Referring to people as victims when you're not sure victimisation has taken place has huge potential to influence the legal process," Shaw says.

In Shaw's opinion, there's a third alternative for the criminal justice system. Besides truth and lies, there are also falsehoods masquerading as reality in people's minds. She agrees with Elizabeth Loftus's suggestions in 2008, that courts should adopt a new oath: "Do you swear to tell the truth, the whole truth, or whatever it is you think you remember?"

Emma Bryce is a science and environmental journalist. This is her first feature for WIRED. The Memory Illusion by Dr Julia Shaw is published by Random House Books, out now.

http://www.wired.co.uk/article/false-memory-syndrome-false-confessions-memories