

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/287699311>

What Do People Believe About Memory? Implications for the Science and Pseudoscience of Clinical Practice

Article in *Canadian journal of psychiatry. Revue canadienne de psychiatrie* · December 2015

DOI: 10.1177/070674371506001204

CITATIONS

11

READS

263

4 authors, including:



Steven Jay Lynn

Binghamton University

374 PUBLICATIONS 8,440 CITATIONS

[SEE PROFILE](#)



J.-R. Laurence

Concordia University Montreal

55 PUBLICATIONS 1,114 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Hypnosis: Theory and Research [View project](#)



Historical review [View project](#)

In Review

What Do People Believe About Memory? Implications for the Science and Pseudoscience of Clinical Practice

Steven Jay Lynn, PhD¹; James Evans, MS²; Jean-Roch Laurence, PhD³; Scott O Lilienfeld, PhD⁴

¹ Professor, Binghamton University, Binghamton, New York.

Correspondence: Psychology Department, Binghamton University (SUNY), Binghamton, NY 13902; stevenlynn100@gmail.com.

² Graduate Research Associate, Binghamton University (SUNY), Binghamton, New York.

³ Professor, Concordia University, Montreal, Quebec.

⁴ Professor, Emory University, Atlanta, Georgia.

Key Words: memory, science, pseudoscience, recovered memories, repression, sexual abuse, hypnosis, suggestive techniques

Received July, revised, and accepted September 2015.

Celebrating 60 years
Nous célébrons 60 ans

We examine the evidence concerning what people believe about memory. We focus on beliefs regarding the permanence of memory and whether memory can be repressed and accurately recovered. We consider beliefs about memory among the undergraduate and general population, mental health professionals, judges, jurors, and law enforcement officers to provide a broad canvass that extends to the forensic arena, as well as to psychiatry, psychology, and allied disciplines. We discuss the implications of these beliefs for the education of the general public and mental health professionals regarding the science and pseudoscience of memory and the use of suggestive procedures in psychotherapy.



French abstract title

abstract

Despite what many people believe, memory is not a repository of past experiences but a dynamic mechanism that ensures the stability and coherence of the self across situations. In recent decades, researchers have documented the striking limitations and plasticity of memories. Today, scholars recognize that memories are reconstructive rather than reproductive. Rarely, if ever, are memories exact replicas of the past.^{1,2} Instead, memories are often stitched together into plausible—but not necessarily accurate—narratives based on beliefs, feelings, intuitions, guesses, and memory fragments.^{3,4} As William James observed over a century ago,

False memories are by no means rare occurrences in most of us . . . Most people probably are in doubt about certain matters ascribed to their past. They may have seen them, may have said them, done them, or they may only have dreamed or imagined they did so.^{5, p 173–174}

Nevertheless, many clinicians and laypeople hold beliefs about memory that contradict scientific evidence. These beliefs may lead therapists and patients to accept memory retrieval techniques that are suggestive and potentially harmful. In our article, we examine what people believe

about memory and briefly discuss the implications of these beliefs for psychotherapy.

Typically, the more vivid, detailed, and emotional the memories, the more easily they are accessed and held with confidence, regardless of their accuracy.⁶⁻⁸ Even in cases of emotionally compelling, so-called flashbulb memories⁹—memories marked by a seemingly photographic quality—recollections often change substantially over time, as documented by studies of the catastrophic breakup of the space shuttle Challenger,¹⁰ the trial verdict of football star O J Simpson,¹¹ the death of Princess Diana,¹² and the September 11, 2001, attacks.¹³ Dekel and Bonanno¹⁴ conducted repeated memory assessments of survivors of the September 11th attacks who had witnessed them directly, and found considerable variation in memory reports at 7, compared with 18, months. People who were resilient in the face of trauma created a more benign memory over time, whereas those who experienced chronic posttraumatic stress disorder symptoms reported relatively stable memories. The causality of this finding is unclear; a more benign reconstruction of memory could lead to more benign outcomes, or vice-versa (or both). In a study of US veterans of the Gulf War, Operation Desert Storm, Southwick et al¹⁵ found that 88% of veterans recounted a different response regarding a traumatic event (for example, sniper fire) they experienced 2 years after their service, compared with 1 month after their return, and 61% of veterans experienced more than 1 changed memory.

Laboratory research also indicates that events can be remembered as more traumatic than they were initially experienced. Strange and Takarangi¹⁶ reported that participants claimed, incorrectly, to have witnessed 26% of the short clips removed from an emotionally disturbing film of a car accident in which 5 people, including a baby, were killed. Participants were particularly prone to mistakenly recall with high confidence the most traumatic clips.

The malleability of memory is further underscored by 2 findings: suggestive procedures can implant false memories of complex events, such as riding in a hot air balloon, being the victim of bullying, being subjected to a vicious animal attack, and committing a crime, in 20% to 80% of participants¹⁷⁻¹⁹; and eyewitness testimony is frequently confidently expressed in the courtroom, even though it can be inaccurate.²⁰⁻²² The specificity of recall of events and the emotion participants attach to these events provide no guarantee of their accuracy.^{23,24}

The finding that memory is reconstructive bears important implications for therapy, as does the contrary belief that memories are preserved in pristine form in the unconscious, yet accessible using memory recovery techniques. Therapist and patient beliefs regarding memory and the centrality of memory recovery to the process of therapy can steer decisions regarding the choice of therapeutic techniques. Beliefs and expectations can even influence the presentation of the patient. Sagan²⁵ observed that the clinical material that emerges in psychotherapy following memory recovery

Clinical Implications

- Competent psychiatrists and other mental health professionals must possess basic knowledge concerning the workings of human memory.
- False beliefs regarding memory may predispose to the use of unsupported and potentially harmful suggestive therapeutic techniques.

Limitations

- It is possible that some recovered memories are accurate.
- Little is known about how best to educate mental health professionals about the basic science of memory.

techniques often bears striking parallels to the expectations of the clinician, as in cases of supposed child sexual abuse, satanic ritual abuse, and alien abductions.²⁶

The belief that memories lie hidden or dormant in the unconscious traces its origins largely to Freud²⁷ and his conceptualization of repression as arising when the ego is “confronted by an experience, an idea, a feeling, arousing an affect so painful that the person resolved to forget it.”^{p 61-62} Although Freud used the term “resolved to forget,” he conceptualized repression as the unconscious, motivated forgetting of unpleasant material.²⁸ The presumption that the recovery of repressed or dissociated traumatic memories is essential to mental healing became a fundamental tenet of psychoanalysis and remains central to contemporary memory recovery therapies.²⁹

The idea of the permanence of memory and the need to recover repressed memories to recover from trauma is vividly captured in the notion of body memories, as described in a manual for sexual abuse survivors:

Your body, believe it or not, remembers everything. Sounds, smells, touches, tastes. But the memory is not held in your mind, locked somewhere in the recesses of your brain. Instead, it's held in your body, all the way down at the cellular level.³⁰

In van der Kolk's³¹ words, *The Body Keeps the Score*. The implication is that if somatic experiences are not recovered and dealt with, complete recovery from sexual abuse is difficult or impossible.

According to survey research, 36% of US psychotherapists³² interpret body pains or physical symptoms as indicative of childhood sexual abuse. Legault and Laurence³³ found that 71% of Canadian social workers and 61% of licensed psychologists agreed that “Sensory impressions from early in life (preverbal memories) may form the basis for reliable memories which can be recovered later on.”^{p 122} This belief is mirrored in the general population. Freedman and Laurence³⁴ reported in a conference presentation that 38.1% of psychology undergraduates reported that “Sometimes, it feels as though my body remembers things that I consciously forgot.”

Contemporary interventions that draw on memory recovery

often lack credible empirical support. Among them are sensorimotor psychotherapy, somatic experiencing therapy, neurolinguistic programming, alien abduction therapy, energy approaches, experiential integration, reenactment protocol, and internal family systems therapy, the last of which involves interaction and work with putatively dissociated parts of the personality.^{35,36} Many of these treatments can be considered pseudoscientific, because they are not only supported mostly or exclusively by anecdotal claims, rather than by controlled trials, but also reliant on scientifically unsupported beliefs that memory is permanent and that excavating memories is vital to positive therapy outcomes. These therapies can be contrasted with empirically supported interventions, such as exposure therapies, which seek to blunt the harmful emotional force of readily accessible memories with no implication that unearthing repressed memories is necessary.

A sampling of memory recovery therapies is illustrative. Brainspotting seeks to determine the location of unavailable experiences and symptoms of trauma at the “unconscious body brain” and release them, in which a brainspot is defined as the

eye position which is related to the energetic/emotional activation of a traumatic/emotionally charged issue within the brain, most likely in the amygdala, the hippocampus, or the orbitofrontal cortex of the limbic system.³⁷

Or, consider Somatic Transformation therapy, which purportedly

balances the arousal and fear of recovered memories with felt experiences of self-regulation of the emotional physiological systems. Subtle gestures and movements of the body are utilized to access sensory data and result in shifts in the brain-body continuum.³⁸

According to the Dr Janov’s Primal Center³⁹ website, which espouses primal therapy (colloquially termed primal scream therapy),

We have found a way into those early emotional archives and have learned to have access to those memories, to dredge them up from the unconscious, allowing us to re-experience them in the present, integrate them and no longer be driven by the unconscious . . . The number one killer in the world today is not cancer or heart disease, it is repression.

The website of the Traumatic Incident Reduction [TIR] Association⁴⁰ states,

When something happens that is . . . painful, one has the option of either confronting it fully and feeling the pain, or trying in some way to block one’s awareness of it . . . in the second case, the action of experiencing that incident is blocked . . . in the great

majority of cases, TIR correctly applied results in the complete and permanent elimination of PTSD [posttraumatic stress disorder] symptomatology.

These claims are based on the scientifically dubious assumption that highly aversive experiences are typically banished from consciousness. To the contrary, a sizable corpus of findings reveal that emotional memories are usually highly salient and memorable.^{7, p 33;41}

Beliefs About Memory

One reason why memory recovery therapies flourish is that beliefs in the permanence of memory and the repression of traumatic memories are prevalent among laypeople and mental health professionals. Golding et al⁴² reported that 89% of undergraduates had heard of a circumstance in which someone recovered a repressed memory. Not surprisingly, 75% learned of this circumstance via television. Moreover, the amount of media exposure was related to the believability of repressed memories.

Patihis et al⁴³ (in their Study 2) conducted a survey of beliefs regarding memory. Two-thirds of undergraduates agreed to some extent with the statement that “Memory of everything experienced is stored permanently in the brain, even if we can’t access all of it,”^{p 521} and a similar rate of laypeople responded affirmatively to the same question. Patihis et al found rates of endorsement of the same question of 59.3% in Great Britain and 84.4% in India. When Alvarez and Brown⁴⁴ worded the question somewhat more restrictively (“Precise records of all our experiences are permanently stored in the brain”^{p 3}), a lower yet still sizable percentage (31%) of the US public endorsed it. A slightly lower rate (28%) emerged in response to the question, “Once you have experienced an event and formed a memory of it, that memory does not change,”^{45, p 3} in an online survey of the US community conducted via Mechanical Turk, compared with 47.6% in the community in a nononline survey.⁴⁶ Simons and Chabris⁴⁵ found that when the question was worded, “Human memory works much like a video camera, accurately recording the events we see and hear so that we can review and inspect them later,”^{p 7} [Dr Lynn: Please provide the page number for this quotation] 46.9% of a sample drawn from Mechanical Turk responded affirmatively,^{45, p 4} and 63% of a sample acquired by SurveyUSA responded likewise.^{46, p 5} Clearly, a broad swath of the US population concurs that memories are permanently stored.

Turning to professional beliefs, high rates of practitioners in Canada^{33, p 122} agreed that memory is permanent, with percentages varying from 84% of social workers, 71% of psychologists, and 51% of physicians. Wise et al⁴⁷ similarly found that about two-thirds of US law enforcement officers agreed that memory works like a tape recorder. In a survey of 103 psychologists in South Africa, Kagee and Breet⁴⁸ reported that 31% indicated probable or definite agreement that memory works like a video camera or tape recorder, accurately reproducing everything we have experienced.

In contrast, several recent findings are somewhat more encouraging. In a sample of 234 licensed psychologists in New England, Meyer⁴⁹ reported that 12% disagreed that “Psychological research has discredited the idea that human memory works like a video or tape recorder.”^{p 111} Simons and Chabris^{46, p 5} found that none of the 16 experts (cognitive and [or] social experimental psychologists) surveyed agreed that memory does not change once it is formed, and a minority, but still disconcerting percentage (24%), of 96 experts that Patihis et al^{43, p DS18} questioned affirmed this belief.

The belief in repressed memories is also widespread. More than 20 years ago, Loftus^{3, p 534} called attention to the risk that therapists who hold this belief will communicate it to patients, opening the door to interventions geared to recovering ostensibly recovered memories. Despite strong evidence against the thesis that memories are readily repressed,^{7, p 33} the idea that repression occurs is very much alive today among professionals. In the survey just described, Patihis et al^{43, p DS18} reported that 19.4% of clinical psychology researchers in US universities, 60.3% of board-certified clinical psychology practitioners, and 83.9% of general population adults agreed, to at least some extent, that “Traumatic memories are often repressed.” Interestingly, practitioners of alternative therapies, including neurolinguistic programming, Thought Field Therapy (TFT), internal family systems therapy, and hypnotherapy, agreed, to some extent, with this latter statement, with rates between 80.6% (internal family systems therapists) to 100% (TFT and primal therapists). Additionally, 16.1% of research-oriented clinical psychologists, 43.1% of clinical practitioners, and 77.7% of general population adults agreed, to at least some extent, that “Repressed memories can be retrieved in therapy accurately.”² **[Dr Lynn: Is this quotation also from reference 43?]** These statistics complement those of earlier surveys of practitioners (71% of doctor of psychology clinicians and 58% of doctor of philosophy clinicians in the United States⁵⁰; 64% of licensed psychologists in Norway⁵¹; and 96% psychotherapists in the Netherlands⁵²) who reported high levels of belief in recovered or repressed memories, compared with only 34% of experimental psychologists.^{50, p 255} Poole et al^{32, p 432} found that 71% of clinical and counselling psychologists had encountered at least one case of recovered memory. Moreover, Legault and Laurence^{33, p 123} reported that 27% of Canadian psychologists concurred that “Recovered memories must be reliable because no one wants to have been abused as a child.”^{p 123} Laurence and Freedman⁵³ reported that 17.5% of 2451 women treated for sexual abuse did not, according to their therapists, have any memory of abuse at the onset of therapy (31.5%) or merely suspected abuse but did not harbour any memories of it (68.5%), raising the possibility that many patients diagnosed and treated for abuse may not have been abused.

The rates of endorsement may differ across studies, because some items do not clearly distinguish memories that are purportedly repressed from those that are forgotten through

ordinary mechanisms (for example, not thinking about events). For example, consider the following question:

Sometimes adults in psychotherapy remember traumatic events from early childhood, about which they previously had absolutely no recollection. Do you think such memories are real or false?^{51, p 56}

Additionally, the question of whether memories that are suddenly remembered are necessarily the products of the lifting of repression remains scientifically controversial. This point may explain why psychologists and psychiatrists who serve as experts in court proceedings in Norway⁵⁴ endorsed the aforementioned question (“all” or “most real”) at a rather high rate (59%) and close to the same rate (64%, see above) as licensed psychologists^{51, p 57} in Norway and advanced clinical psychology students (66%) in Italy.⁵⁵ In contrast, Italian experimental psychology professors were more skeptical in response to this question (24%).^{55, p 254}

Nevertheless, the differential endorsement rates imply that the beliefs of clinicians depart from those of researchers, who generally hold more skeptical views, suggesting a gap in knowledge regarding human memory. Indeed, clinicians who are not active in research, compared with their research-oriented counterparts, endorse stronger beliefs in repressed memories and the belief that memory recovery techniques do not result in false accusations.^{50, p 255}

Still, providing some cause for concern regarding professional opinion about memory, 38% of members of the Norwegian Psychological Association⁵¹—many of whom are academic psychologists—endorsed the option “they tell the truth” in response to the question,

Sometimes people who have committed murder claim to have no memory for the crime. Do you think such memories can be repressed and that the perpetrator believes they are telling the truth, or do you think they are lying?^{p 57}

Nevertheless, this question may pose a false dichotomy: people may forget a crime for reasons other than unconscious repression (for example, conscious suppression). Moreover, Melinder and Magnussen^{54, p 57} reported that 39% of psychiatrists and psychologists in Norway who served as expert witnesses endorsed the option “they tell the truth,” and Mirandola et al^{55, p 254} similarly found that 36% of professors in experimental psychology in Italy also did. Clearly, a sizable percentage of experts and professionals across different countries hold beliefs that conflict with scientific opinion, which holds that amnesia in these circumstances is highly unlikely.⁵⁶ In addition, in a survey of psychologists in South Africa mentioned earlier, 75.7% responded probably true or definitely true to the statement “individuals commonly repress the memories of traumatic experiences.”^{748, p 5}

Beliefs about memory, repression, and techniques to retrieve memories are interrelated. Patihis et al^{43, p 521} found that participants who believed that traumatic memories are often repressed were more likely than other participants

to believe that repressed memories could be retrieved in treatment and that one can be a victim of child sexual abuse yet have no memory of it. Moreover, certain individual differences predicted memory beliefs. For example, skepticism regarding repressed memories was associated with being male and with more years of college education; high SAT scores were associated with less agreement with the ideas that repressed memories can be retrieved in therapy and that some people have true photographic (eidetic) memories; and critical thinking ability was associated with skepticism that repressed memories can be recovered accurately in therapy and during hypnosis, that memory is permanently stored and photographic, and that memory is almost always reliable. Moreover, high scores on fantasy proneness and absorption predicted disagreement with the idea that memory is unreliable and agreement that memory is stored permanently. Trait empathy predicted belief that traumatic memories are often repressed.

A curious aspect of beliefs about memory is that people may simultaneously believe that memories are both permanent and cannot be trusted. For example, Patihis et al⁴³, p. 521 reported that 85.9% of undergraduates agreed, to some extent, that “Memory is unreliable,” yet 66.7% agreed, to some extent, that “Memory of everything experienced is stored permanently in the brain, even if we can’t access all of it.” One might extrapolate that some people believe that memories that are accessible (for example, not repressed and not dissociated) may be subject to distortion, prone to suggestive influence, or overlaid by inaccurate memories.

Legault and Laurence³³ reported that 71% of psychologists agreed that “Everything one experiences is permanently recorded in one’s brain,” while 97% agreed that “Post-event information can alter a person’s recall of an event.”^{p. 122} Apparently, the idea that memory can be modified after the fact does not conflict with the notion that memories are permanently recorded. How people reconcile contradictory, or at least disparate, beliefs about memory warrants future research.

Although undergraduates’ opinions about the accuracy of repressed memories appear not to have changed much between 1995⁴², p. 432 (mean 5.57 on a scale, with 1 = never accurate, 10 = always accurate) and 2011⁴³, p. 527 (mean 5.39), some changes in beliefs about recovered memory are evident among mainstream clinical psychology practitioners during this same period, based on responses to questions concerning a case vignette. This vignette described a woman in therapy who recovered vivid memories of sexual abuse at age 2 by her father. The therapists, who were sampled from the American Psychological Association, responded 6.45 (with 1 = not likely at all, 10 = extremely likely) regarding whether they believed the client was sexually abused,⁵⁷ compared with a more recent study of members of the American Academy of Clinical Psychology sampled in 2011–2012,⁴³, p. 526 who rated the item 4.45, a significant decrease. Moreover, rated willingness to assist the client in retrieving memories of childhood sexual abuse

decreased from 4.8 to 3.4, again a significant decrease. A similar significant decline was observed (from 4.6 to 2.9) in response to the question, “How likely are you to tell the client that you suspect a history of sexual abuse?” These changes in beliefs raise the possibility that clinicians are paying greater heed to the scientific literature on memory.

Closing Thoughts

Beliefs can create reality. To the extent that laypeople—many of whom obtain psychotherapy—and mental health professionals hold outdated and poorly supported beliefs regarding the nature of human memory, mental health consumers and their loved ones will inevitably be exposed to psychological risk.⁵⁸ In particular, many false beliefs about memory may contribute to the use of suggestive interventions geared to the recovery of repressed memories. These techniques include repeated prompting of memories, guided imagery, and hypnosis and hypnotic and nonhypnotic age regression. A nontrivial proportion of therapists use many of these techniques. The reported use of age regression techniques in psychotherapy ranges from 7.1%⁵⁹ (for sexual abuse) to 20%.³³, p. 124 Moreover, Legault and Laurence³³, p. 124 reported that 44% of therapists reported that they used imagination-based interventions, including hypnosis, to assist patients in recovering memories (see Polusny and Follette⁶⁰ and Poole et al³², p. 432 for earlier surveys).

Regrettably, the basic science of human memory and cognition is rarely emphasized in the education and training of mental health professionals.⁶¹ Therefore, we strongly recommend that systematic exposure to the nature of human memory, especially its fallibility, become a required—not merely a desired—component in the coursework of psychologists, psychiatrists, psychiatric nurses, social workers, and other mental professionals. To practice scientifically, therapists must be certain to avail themselves of the best available scientific evidence on the nature of memory. By doing so, they can avoid inadvertently implanting false memories, and thereby ensure that they are not harming the very people for whom they have been entrusted to help.

Acknowledgements

The authors have no conflicts of interest to report.

The Canadian Psychiatric Association proudly supports the In Review series by providing an honorarium to the authors.

References

1. Clifasefi SL, Garry M, Loftus E. Setting the record (or video camera) straight on memory: the video camera model of memory and other memory myths. In: Dell Sala S, editor. *Tall tales about the mind and brain: separating fact from fiction*. Oxford (GB): Oxford University Press; 2007. p 60–75.
2. Howe ML, Knott LM. The fallibility of memory in judicial processes: lessons from the past and their modern consequences. *Memory*. 2015;23(5):1–24.
3. Loftus EF. The reality of repressed memories. *Am Psychol*. 1993;48(5):518–537.

4. Loftus EF. Planting misinformation in the human mind: a 30-year investigation of the malleability of memory. *Learn Memory*. 2005;12(4):361–366.
5. James W. *The principles of psychology* (vol 1). New York (NY): Holt; 1890.
6. McGaugh JL. The amygdala modulates the consolidation of memories of emotionally arousing experiences. *Annu Rev Neurosci*. 2004;27:1–28.
7. McNally RJ. Recovering memories of trauma: a view from the laboratory. *Curr Dir Psychol Sci*. 2003;12(1):32–35.
8. Phelps EA. Emotion and cognition: insights from studies of the human amygdala. *Annu Rev Psychol*. 2006;57:27–53.
9. Brown R, Kulik J. Flashbulb memories. *Cognition*. 1977;5(1):73–99.
10. Neisser U, Harsch N. Phantom flashbulbs: false recollections of hearing the news about Challenger. In: Wonograd E, Neisser U, editors. *Affect and accuracy in recall: studies of “flashbulb” memories*. Emory symposia in cognition, 4. New York (NY): Cambridge University Press; 1992. p 9–31.
11. Schmolck H, Buffalo EA, Squire LR. Memory distortions develop over time: recollections of the OJ Simpson trial verdict after 15 and 32 months. *Psychol Sci*. 2000;11(1):39–45.
12. Krackow E, Lynn SJ, Payne D. The death of Princess Diana: the effects of memory enhancement procedures on flashbulb memories. *Imagin Cogn Pers*. 2005–2006;25:197–220.
13. Hirst W, Phelps EA, Maksin R, et al. A ten-year follow-up of a study of memory for the attack of September 11, 2001: flashbulb memories and memories for flashbulb events. *J Exp Psychol Gen*. 2015;144(3):604–623.
14. Dekel S, Bonanno GA. Changes in trauma memory and patterns of posttraumatic stress. *Psychol Trauma*. 2013;5(1):26–34.
15. Southwick SM, Morgan CA, Nicolaou AL, et al. Consistency of memory for combat-related traumatic events in veterans of Operation Desert Storm. *Am J Psychiatry*. 1997;154(2):173–177.
16. Strange D, Takarangi MK. False memories for missing aspects of traumatic events. *Acta Psychol (Amst)*. 2012;141(3):322–326.
17. Garry M, Wade KA. Actually, a picture is worth less than 45 words: narratives produce more false memories than photographs do. *Psychon Bull Rev*. 2005;12(2):359–366.
18. Lindsay DS, Hagen L, Read JD, et al. True photographs and false memories. *Psychol Sci*. 2004;15(3):149–154.
19. Shaw J, Porter S. Constructing rich false memories of committing crime. *Psychol Sci*. 2015;26(3):291–301.
20. Brewer N, Wells GL. Eyewitness identification. *Curr Dir Psychol Sci*. 2011;20(1):24–27.
21. Loftus EF. 25 years of eyewitness science finally pays off. *Perspect Psychol Sci*. 2013;8(5):556–557.
22. Wells GL, Bradford AL. “Good you identified the suspect”: feedback to eyewitnesses distorts their reports of the witnessing experience. *J Appl Psychol*. 1998;83:360–376.
23. Bell BE, Loftus EF. Degree of detail of eyewitness testimony and mock juror judgments. *J Appl Soc Psychol*. 1988;18(14):1171–1192.
24. Howe ML. Memory lessons from the courtroom: reflections on being a memory expert on the witness stand. *Memory*. 2013;21(5):576–583.
25. Sagan C. *Science as a candle in the dark. The demon-haunted world*. New York (NY): Random House; 1995.
26. Ruscio J. The clinician as subject: practitioners are prone to the same judgment errors as everyone else. In: Lilienfeld SO, O’Donohue WT, editors. *The great ideas of clinical science: 17 principles that every mental health professional should understand*. London (GB): Routledge; 2007. p 27–45.
27. Freud S. The psycho-neuroses of defense [1894]. In: Strachey J, editor and translator, in collaboration with Anna Freud; Strachey A, Tyson A, Richards A, assistant translators. *The standard edition of the complete psychological works of Sigmund Freud*. Vol III. Early psycho-analytic publications (1893–1899). London (GB): Hogarth Press and the Institute of Psycho-Analysis; 1953–1974. p 43–62.
28. Holmes DS. The evidence for repression: an examination of sixty years of research. In: Singer JL, editor. *Repression and dissociation: implications for personality theory, psychopathology, and health*. Chicago (IL): University of Chicago Press; 1990. p 85–102.
29. Pintar J, Lynn SJ. *Hypnosis: a brief history*. Chichester (GB): John Wiley & Sons; 2009.
30. Mack L. What are body memories? And how to heal them . . . Survivor manual inspiring and empowering survivors to lead joyful lives [Internet]. [city of publication and publisher unknown]; 2011 Nov 5 [cited 2015 Aug 1]. Available from: <http://www.survivormanual.com/2011/11/what-are-body-memories-and-how-to-heal-them>.
31. van der Kolk BA. The body keeps the score: memory and the evolving psychobiology of posttraumatic stress. *Harv Rev Psychiatry*. 1994;1:253–265.
32. Poole DA, Lindsay DS, Memon A, et al. Psychotherapy and the recovery of memories of childhood sexual abuse: US and British practitioners’ opinions, practices and experiences. *J Consult Clin Psychol*. 1995;63(3):426–437.
33. Legault E, Laurence J-R. Recovered memories of childhood sexual abuse: social worker, psychologist, and psychiatrist reports of beliefs, practices, and cases. *Aust J Clin Exp Hypno*. 2007;35(2):111–133. Also available from: http://www.hypnosisaustralia.org.au/wp-content/uploads/journal/AJCEH_V0135_N02_Nov07.pdf#page=7.
34. Freedman S, Laurence JR. The evanescent nature of our memory canvas: nonconscious influences on the construction of memory narratives. Poster presented at the 16th annual Association for the Scientific Study of Consciousness conference; 2012 Jul; Brighton, England.
35. Pignotti M, Thyer BA. New age and novel unsupported therapies in mental health practice. In: Lilienfeld SO, Lynn SJ, Lohr J, editors. *Science and pseudoscience in clinical psychology*. New York (NY): Guilford; 2014. p 191–209.
36. Shapiro R. *The trauma treatment handbook: protocols across the spectrum*. New York (NY): W W Norton & Company; 2010.
37. Grand D. What is brainspotting? [Internet]. [city of publication, publisher, and year of publication unknown] [cited 2015 Jul 31]. Available from: <https://brainspotting.pro/page/what-brainspotting>.
38. Stanley S. Welcome to Somatic Transformation [Internet]. Bainbridge Island (WA): Somatic Transformations; 2015 [cited 2015 Jul 31]. Available from: <http://www.somatic-transformation.org/SomaticTransformation.html>.
39. Dr Janov’s Primal Center. What is primal therapy? [Internet]. Santa Monica (CA): Dr Janov’s Primal Center; 2008 [cited 2015 Jul 31]. Available from: <http://www.primaltherapy.com/what-is-primal-therapy.php>.
40. Traumatic Incident Reduction (TIR) Association. Traumatic incident reduction (TIR) [Internet]. Ann Arbor (MI): TIR Association; [year of publication unknown] [cited 2015 Jul 31]. Available from: <http://www.tir.org/about-tir.html>.
41. Shobe KK, Kihlstrom JF. Is traumatic memory special? *Curr Dir Psychol Sci*. 1997;6:70–74.
42. Golding JM, Sanchez RP, Sego SA. Do you believe in repressed memories? *Prof Psychol Res Pr*. 1996;27(5):429–437.
43. Patihis L, Ho LY, Tingen IW, et al. Are the “Memory Wars” over? A scientist–practitioner gap in beliefs about repressed memory. *Psychol Sci*. 2014;25(2):519–530.
44. Alvarez CX, Brown SW. What people believe about memory despite the research evidence. *Gen Psychol*. 2002;37(1):1–6.
45. Simons DJ, Chabris CF. Common (mis)beliefs about memory: a replication and comparison of telephone and Mechanical Turk survey methods. *PLoS ONE*. 2012;7(12):1–5.
46. Simons DJ, Chabris CF. What people believe about how memory works: a representative survey of the US population. *PLoS ONE*. 2011;6(8):1–7.
47. Wise RA, Safer MA, Maro CM. What US law enforcement officers know and believe about eyewitness factors, eyewitness interviews and identification procedures. *Appl Cognitive Psychol*. 2011;25(3):488–500.
48. Kagee A, Breet E. Psychologists’ endorsement of unsupported statements in psychology: Noch Einmal. *S Afr J Psychol*. 2015;45:1–13.
49. Meyer JF. 2015. Development and psychometric evaluation of a clinical beliefs questionnaire for licensed psychologists [dissertation]. [Kingston (RI)]: University of Rhode Island.
50. Dammeyer DD, Nightingale NN, McCoy ML. Repressed memory and other controversial origins of sexual abuse allegations: beliefs among psychologists and clinical social workers. *Child Maltreat*. 1997;2:252–263.

51. Magnussen S, Melinder A. What psychologists know and believe about memory: a survey of practitioners. *Appl Cogn Psychol*. 2012;26(1):54–60.
52. Merckelbach H, Wessel I. Assumptions of students and psychotherapists about memory. *Psychol Rep*. 1998;82(3 Pt 1):763–770.
53. Laurence JR, Freedman S. Research brief: number of clients at risk for developing false memories of abuse: addendum to Legault and Laurence. *Crime Scene*. 2009;16(1):15–16.
54. Melinder A, Magnussen S. Psychologists and psychiatrists serving as expert witnesses in court: what do they know about eyewitness memory? *Psychol Crime Law*. 2015;21(1):53–61.
55. Mirandola C, Ferruzza E, Cornoldi C, et al. Beliefs about memory among psychology students and their professors in psychodynamic clinical and experimental study programs. *Eur Rev Appl Psychol*. 2013;63(5):251–256.
56. Cima M, Nijman H, Merckelbach H, et al. Claims of crime-related amnesia in forensic patients. *Int J Law Psychiatry*. 2004;27(3):215–221.
57. Gore-Felton C, Koopman C, Thoresen C, et al. Psychologists' beliefs and clinical characteristics: judging the veracity of childhood sexual abuse memories. *Prof Psychol Res Pr*. 2000;31:372–377.
58. Lilienfeld SO. Psychological treatments that cause harm. *Perspect Psychol Sci*. 2007;2(1):53–70.
59. Pignotti M, Thyer BA. Use of novel unsupported and empirically supported therapies by licensed clinical social workers: an exploratory study. *Soc Work Res*. 2009;33(1):5–17.
60. Polusny MA, Follette VM. Remembering childhood sexual abuse: a national survey of psychologists' clinical practices, beliefs, and personal experiences. *Prof Psychol Res Pr*. 1996;27(1):41–52.
61. Sechrest L, Smith B. Psychotherapy is the practice of psychology. *J Psychother Integr*. 1994;4(1):1–29.