Research Article

Psychological Science
2014, Vol. 25(2) 519–530
© The Author(s) 2013
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0956797613510718
pss.sagepub.com

Are the "Memory Wars" Over? A Scientist-Practitioner Gap in Beliefs About Repressed Memory

Lawrence Patihis[1], Lavina Y. Ho[2], Ian W. Tingen[1], Scott O. Lilienfeld[3], and Elizabeth F. Loftus[1]
[1]Department of Psychology and Social Behavior, University of California, Irvine; [2]Department of Behavioral Sciences and Education, Pennsylvania State University; and [3]Department of Psychology, Emory University

Abstract
The "memory wars" of the 1990s refers to the controversy between some clinicians and memory scientists about the reliability of repressed memories. To investigate whether such disagreement persists, we compared various groups' beliefs about memory and compared their current beliefs with beliefs expressed in past studies. In Study 1, we found high rates of belief in repressed memory among undergraduates. We also found that greater critical-thinking ability was associated with more skepticism about repressed memories. In Study 2, we found less belief in repressed memory among mainstream clinicians today compared with the 1990s. Groups that contained research-oriented psychologists and memory experts expressed more skepticism about the validity of repressed memories relative to other groups. Thus, a substantial gap between the memory beliefs of clinical-psychology researchers and those of practitioners persists today. These results hold implications for the potential resolution of the science-practice gap and for the dissemination of memory research in the training of mental-health professionals.

Keywords
memory beliefs, repressed memory, hypnosis, clinical psychology, individual differences

Received 6/18/13; Revision accepted 10/7/13

The controversy regarding the concept of repressed memories, also known as the "memory wars" (Crews, 1995), came to the fore in the 1990s. On one side of the debate were individuals who believed that memories of traumatic events can be repressed, such that the memories remain inaccessible for years and yet can be recovered accurately in therapy (e.g., Blume, 1990; Freyd, 1994). On the other side of the debate were those who questioned the existence of repressed memory. These individuals worried that there was little if any credible scientific support for the idea that people can experience repeated traumatic events for years, remain unaware of these events, and reliably recover them in therapy (e.g., Holmes, 1990; Loftus, 1993).

These differing beliefs can have profound consequences for clinical practice and the judicial system. For example, therapists who believe that traumatic memories can be repressed may develop treatment plans that differ dramatically from those developed by practitioners who do not hold this belief. In the courtroom, beliefs about memory often determine whether repressed-memory testimony is admitted into evidence.

Psychologists' Beliefs

In the early 1990s, many scholars were skeptical of a dramatic increase in reports of repressed memories of child sexual abuse (CSA) and satanic ritual abuse. Researchers began to investigate beliefs about memory among clinicians, wondering if some of these beliefs were fueling suggestive therapeutic practices. For example, in 1992, Yapko

Corresponding Author:
Lawrence Patihis, 4201 Social and Behavioral Sciences Gateway, Irvine, CA 92697
E-mail: lpatihis@uci.edu

(1994a, 1994b) found that 34% of M.A.-level psychotherapists and 23% of Ph.D.s agreed that traumatic memories recovered during hypnosis "objectively must actually have occurred" (Yapko, 1994a, p. 168). When asked whether hypnosis can help individuals to recover memories as far back as birth, 59% of M.A.s and 48% of Ph.D.s agreed that it can. Dammeyer, Nightingale, and McCoy (1997) found that 71% of Psy.D. clinicians and 58% of Ph.D. clinicians indicated a strong belief in repressed memories, whereas only 34% of experimental psychologists did. Merckelbach and Wessel (1998) found that 94% of students and 96% of psychotherapists in The Netherlands endorsed belief in the existence of repressed memory.

In 1996, Gore-Felton et al. (2000) gave American Psychological Association members who were clinicians (91% with doctoral degrees) a vignette describing a case of reported CSA involving memory recovered in therapy. On average, the therapists indicated that CSA was "somewhat likely" in the case and that they would be "somewhat likely" to treat the client by attempting to recover memories of CSA. The latter finding suggested that beliefs can translate into therapists' treatment plans. More recently, Magnussen and Melinder (2012) surveyed licensed psychologists in Norway and found that 63% believed that recovered memories of traumatic events are real. These findings indicate a lack of skepticism about repressed memory in a large number of clinicians.

Laypersons' Beliefs

In a survey of 2,000 adult Norwegians, Magnussen et al. (2006) found that, although some laypersons' ideas about memory (e.g., memory for dramatic vs. ordinary events) were consistent with existing evidence from memory research, 45% of respondents with a college degree believed that frightening and dramatic memories can be blocked; approximately 40% of respondents with a college degree believed that people who have committed murder can repress the memory of the crime. Simons and Chabris (2011; see also Simons & Chabris, 2012) found that 63% of the U.S. public agreed that memory works like a video camera, 48% agreed that memory is permanent, and 55% believed that memory can be enhanced through hypnosis.

In Garry, Loftus, and Brown's (1994) survey of graduate students in education, health, and nursing courses, 88% of students stated that painful experiences can be hidden in the unconscious, and 64% indicated that the hidden memories can be emotionally damaging. Similarly, Golding, Sanchez, and Sego (1996) found that many undergraduates believed in repressed memories to some degree. Students were asked to rate the accuracy of repressed memories on a scale from 1 (*never accurate*) to 10 (*always accurate*), and the mean rating was 5.6. About a quarter of the students (24%) indicated that therapists who encourage individuals to recall repressed memories use legitimate methods, and 73% believed that these therapists both use legitimate methods and implant false memories. These findings indicate that a sizable portion of the general public and students believed in repressed memory.

The Present Study

Although the research we have summarized revealed some aspects of therapists' and laypersons' beliefs about how memory works, it is not known whether beliefs about repressed memory specifically have changed markedly in key groups from the heyday of the memory wars, and if so, how. Given heightened media coverage of the potential dangers of the uncritical acceptance of repressed memory (e.g., Bikel, 1995; Hassler, 1994; Maran, 2010; Nathan, 2011), one might predict that society as a whole, including psychologists, has become more skeptical regarding the accuracy of repressed memories.

Another gap in the literature concerns whether personality and attitudinal variables predict beliefs about memory. Are repressed-memory skeptics any different from nonskeptics in terms of intelligence, rationality, and personality? Moreover, little is known about the extent to which different groups of mental-health professionals hold different beliefs regarding memories, including recovered memories. To address these gaps in the literature, we investigated individual differences in memory beliefs in undergraduates, how undergraduates' and psychologists' current memory beliefs compare with these groups' beliefs in the 1990s, and how key groups of psychologists and other mental-health professionals vary in their views regarding repressed memory.

In Study 1, we asked undergraduates about their beliefs about memory and administered individual difference measures to ascertain the correlates of memory beliefs. In Study 2, we investigated beliefs in various groups (psychology researchers, clinical psychologists, alternative therapists, the public, and undergraduates) about the workings of memory. We did so to ascertain whether beliefs about repressed memory have changed over the past two decades. To maximize comparability with earlier results, we drew upon questions from earlier surveys.

Study 1

In our first study, we examined what undergraduates believe about how memory works and how memory beliefs are interrelated. In addition, we examined potential individual difference correlates of these beliefs. For example, we hypothesized that because people with

Table 1. Results From Study 1: Percentage of Undergraduates Who Agreed With Eight Statements About Memory

Statement	Agreement (%)
Traumatic memories are often repressed.	81.0
Repressed memories can be retrieved in therapy accurately.	70.0
Memory can be unreliable.	85.9
Hypnosis can accurately retrieve memories that previously were not known to the person.	44.6
Memory is constantly being reconstructed and changed every time we remember something.	90.8
Memory of everything experienced is stored permanently in brain, even if we can't access all of it.	66.7
Some people have true "photographic memories."	87.7
With effort, we can remember events back to birth.	15.1

Note: Participants responded to each statement on a fully anchored 6-point Likert scale with the following anchors: *strongly disagree, disagree, slightly disagree, slightly agree, agree*, and *strongly agree*. Participants who chose *slightly agree, agree*, or *strongly agree* were counted as agreeing with a statement.

high levels of fantasy proneness, dissociation, and absorption appear to be prone to certain false memories (e.g., Heaps & Nash, 1999; see also Supplemental Method for Study 1 in the Supplemental Material available online), they are more inclined than others to accept the view that recovered memories are genuine and that memory is reliable and permanent. Similarly, because more empathic people are more likely to adopt other people's points of view, we predicted that empathy would be positively associated with belief in the accuracy of sincere and emotionally laden repressed-memory reports. Conversely, if one assumes that skepticism regarding repressed memory requires a combination of certain cognitive skills and exposure to memory research, then education, intelligence, and critical thinking could predict such skepticism.

Data on these and other individual differences should shed light on which characteristics predispose people to certain memory beliefs, and may provide clues to how best to disseminate memory research. For example, if people who accept unsubstantiated ideas about memory are low on a given characteristic, the dissemination of memory research could be designed so that it either does not require high levels of that skill or trait or is aimed at improving it.

Method

Participants. Undergraduates (N = 390) at the University of California, Irvine, participated in a two-session study for course credit (74.9% female, 25.1% male; mean age = 20.2 years).

Materials and procedure. Participants completed individual difference (including personality) questionnaires, cognitive tasks (some not analyzed in this study), and questions about their beliefs about how memory works. (For further information on the individual difference measures, see Supplemental Method for Study 1 and Table S1.1 in the Supplemental Material.) Several of the nine memory-belief questions were developed for the purposes of this study, and others were drawn from the literature (see Table S1.2 in the Supplemental Material).

Results and discussion

Prevalence of beliefs. Table 1 shows the percentage of undergraduates who indicated agreement with each of eight statements about how memory works. Rates of agreement were high for two statements about repressed memory. Eighty-one percent of the undergraduates agreed to some extent that "traumatic memories are often repressed," and 70% agreed to some extent that repressed memories can be "retrieved in therapy accurately." Moreover, 86% indicated that CSA is plausible in the case of a person who has emotional problems and needs therapy even if he or she has no memory of such abuse.

Patterns of memory beliefs. Participants' beliefs about memory fallibility tended to be interrelated to varying degrees (see Table S1.3 in the Supplemental Material). For example, those who agreed that traumatic memories are often repressed also tended to agree that repressed memories can be retrieved in therapy and that someone can be a victim of CSA even without remembering it. An exploratory factor analysis reinforced these correlational findings, revealing one main factor and a minor factor. Factor 1 appeared to reflect belief in repressed memory and memory permanence. Factor 2 appeared to reflect beliefs regarding the unreliability and reconstructive nature of

memory in general (see Supplemental Results for Study 1 in the Supplemental Material for a summary of the factor analysis and how the factor composites correlated with individual differences). This finding implies that some participants concurrently believed that (a) recovered memories exist (Factor 1), but also that (b) memory can sometimes be unreliable or reconstructive (Factor 2).

Predictors of memory beliefs. Here, we present the highlights of analyses of predictors of memory beliefs. See Tables S1.4, S1.5, and S1.6 in the Supplemental Material for summaries of the correlations of all our individual difference measures with memory beliefs.

Gender. Women were more likely than men to agree that memories are often repressed, that repressed memories can be retrieved in therapy, and that all experience is stored in memory.

Education. Participants enrolled for a greater number of years in college tended to exhibit more skeptical beliefs. Compared with students in nonpsychology majors, those in psychology-related majors agreed more that memory is unreliable and agreed less that people can remember events all the way back to birth.

Intelligence and rationality. Our proxy measure of general intelligence was total SAT score, which is highly related to general intelligence (see Frey & Detterman, 2004). Higher SAT scores predicted less agreement with statements that repressed memory can be retrieved in therapy and that some people have true photographic memories.

Critical-thinking ability (West, Toplak, & Stanovich, 2009; see also Supplemental Method for Study 1 in the Supplemental Material) was significantly associated with responses to five of the nine memory-belief items. Participants who scored higher on our critical-thinking composite were less likely to agree that repressed memories can be recovered accurately in therapy and during hypnosis, that memory is photographic and permanently stored, and that memory is reliable.

Personality measures. Participants with higher scores on the Creative Experiences Questionnaire (fantasy proneness; Merckelbach, Horselenberg, & Muris, 2001) and the Tellegen Absorption Scale (Tellegen & Atkinson, 1974) disagreed more with the statement that memory is unreliable and agreed more that memory is stored permanently. Higher scores for fantasy proneness and absorption were associated with greater agreement that some people have photographic memory and that some individuals can remember events back to birth. Surprisingly, lower dissociation scores (Dissociative Experiences Scale-C; Wright & Loftus, 1999) were associated with greater agreement that repressed memories can be accurately recovered in therapy or hypnosis. Empathy was the only personality measure to predict endorsement of the statement that traumatic memories are often repressed.

Conclusion. Study 1 revealed that surprisingly high percentages of undergraduates agreed with the concept of repressed memory, and this raised the question of whether there had been any change in beliefs about repressed memory over the past 2 decades. We explored this question in our next study.

Study 2

In our second study, we investigated views regarding memory repression among psychologists, the general public, and undergraduates. We compared current beliefs with past beliefs using questions from previous studies (Golding et al., 1996; Gore-Felton et al., 2000; Yapko, 1994a, 1994b).

Method

Participants. A total of 1,376 participants completed this study's survey for course credit (undergraduates), compensation (general public), or inclusion in a cash raffle (psychologists, therapists). As shown in Table 2, we recruited practicing psychotherapists, research psychologists, alternative therapists, undergraduate students, and individuals from the general population. Participants were recruited online through the university subject pool (undergraduates) or Amazon's Mechanical Turk (the general public) or were recruited by e-mail invitation (psychologists, life coaches, and therapists). Of those invited by e-mail, 15.5% participated fully, a rate comparable with that of other studies that have recruited participants via e-mail or listserv (e.g., 17% in Magnussen & Melinder, 2012; 13% in Wise, Safer, & Maro, 2011). (For more details on the recruitment of participants, see Supplemental Method for Study 2 in the Supplemental Material.) Table 3 shows demographic information for the participant groups that are the focus of this article (results for the other groups are available in the Supplemental Material).

Procedure and materials. The survey took about 20 min to complete and was conducted online at a time and place of participants' choosing. Participants rated several items from previous studies by Yapko (1994a, 1994b), Gore-Felton et al. (2000), and Golding et al. (1996). The survey also included new items, such as questions asking if, when, and why participants' beliefs about repressed memory had changed.

Table 2. Descriptions, Recruitment, and Participation Rates of the Participant Groups in Study 2

Participant group	How recruited	Number e-mailed	Number who participated
Experimental psychologists (cognitive and social) in research universities	E-mail: addresses obtained from university Web sites in each U.S. state and Canada	493	104 (21.1%)
Members of the Society for Applied Research in Memory and Cognition	E-mail: e-mails sent via listserv by a member of the society	213	70 (32.9%)
Members of the Society for a Science of Clinical Psychology	E-mail: e-mails sent via listserv by a member of the society	548	64 (11.7%)
Clinical-psychology researchers in U.S. research universities	E-mail: addresses obtained from university Web sites in each U.S. state	440	65 (14.8%)
Board-certified clinical-psychology practitioners	E-mail: addresses obtained from the American Academy of Clinical Psychology (aacpsy.org)	516	58 (11.2%)
Psychoanalysts	E-mail: addresses obtained from the American Academy of Psychoanalysis and Dynamic Psychiatry (aapsa.org) and other psychoanalytic groups[a]	357	82 (23.0%)
Neuro-linguistic programming therapists	E-mail: addresses obtained from the American Union of NLP (aunlp.org)	413	59 (14.3%)
Internal Family Systems therapists[b]	E-mail: addresses obtained from the Center for Self Leadership (selfleadership.org)	711	67 (9.4%)
Hypnotherapists (board certified)	E-mail: addresses obtained from the National Board for Certified Clinical Hypnotherapists (natboard.com)	299	50 (16.7%)
Thought Field Therapists[c]	E-mail: addresses obtained from the TFT Foundation (atftfoundation.org)	48	10 (20.8%)
Scientologists[c] (nonchurch Freezone auditors)	E-mail: addresses obtained from the International Freezone Association (internationalfreezone.net)	24	4 (16.7%)
Primal therapists[c,d]	E-mail: addresses obtained from the International Primal Association (e.g., primal-page.com)	29	2 (6.9%)
Undergraduates at the University of California, Irvine	Signed up online for course credit	—	406
Members of the public in the United States	Signed up on Mechanical Turk	—	112
Members of the public in the United Kingdom	Signed up on Mechanical Turk	—	112
Members of the public in India[c]	Signed up on Mechanical Turk	—	109

[a]E-mail addresses of psychoanalysts were also retrieved from the American Psychological Association's Division 39 (apadivisions.org/division-39), the American College of Psychoanalysts (acopsa.org), and some regional psychoanalytic groups in U.S. states (Florida, Illinois, Kansas, Massachusetts, Minnesota, and Texas). [b]According to Internal Family Systems therapists, personality "parts" can be created by trauma. [c]For the sake of brevity, results for these groups are reported in the Supplemental Material rather than in the main article. [d]Primal therapy involves reliving of repressed trauma.

Results and discussion

As in Study 1, a general pattern of intercorrelation among various memory beliefs emerged. An exploratory factor analysis revealed one main factor that could be summarized as belief in repressed memory or memory reliability. Clinical-psychology practitioners (M = 57.5, SD = 19.3) scored significantly higher than clinical-psychology researchers (M = 43.9, SD = 15.5) on this composite factor variable, $t(75) = 3.37$, $p = .001$. This difference remained significant when we controlled for gender and age in a regression model, $\beta = 0.385$, $p = .010$. (See Supplemental Results for Study 2 in the Supplemental Material for a summary of the factor analysis and how other groups scored on the composite factor variable.)

Comparing past and present. Figure 1 shows that the percentage of Ph.D. clinicians who agreed with the statement that hypnotically recovered memories reflect events

Table 3. Characteristics of the Participant Groups in Study 2

Participant group	Age (years) *M*	Age (years) *SD*	Gender (% female)	SES[a] *M*	SES[a] *SD*	Highest degree (%) None[b]	Bachelor's	Master's	Doctorate
Experimental psychologists	50.7	12.8	40.5	7.3	1.3	0.0	1.7	0.0	98.3
SARMAC members	42.9	13.8	61.5	7.0	1.5	0.0	12.8	10.3	76.9
SSCP members	42.7	15.2	52.9	7.1	1.4	0.0	2.9	22.9	74.3
Clinical-psychology researchers	47.1	11.7	52.1	7.4	1.0	0.0	0.0	1.4	98.6
Clinical-psychology practitioners	65.8	9.8	16.1	7.4	1.4	0.0	0.0	0.0	100.0
Psychoanalysts	64.0	12.2	43.3	7.7	1.2	0.0	0.0	2.2	97.8
Neuro-linguistic programming therapists	51.2	10.2	62.1	6.0	1.8	31.8	25.8	30.3	12.1
Internal Family Systems therapists	55.6	9.0	82.2	6.6	1.3	0.0	1.4	71.2	27.4
Hypnotherapists	59.7	9.9	52.8	6.6	1.4	0.0	0.0	50.9	49.1
Undergraduates	20.8	2.8	85.3	5.5	1.6	100.0[c]	0.0	0.0	0.0
Public in the United States	36.4	12.7	54.5	5.0	1.6	66.1	26.8	6.2	0.9
Public in the United Kingdom	32.6	11.7	42.5	5.5	1.6	42.4	37.2	16.8	3.5
Overall sample	39.4	18.3	59.0	6.3	1.7	39.7	11.1	13.4	35.8

Note: SARMAC = Society for Applied Research in Memory and Cognition; SSCP = Society for a Science of Clinical Psychology.
[a]Participants reported their family's socioeconomic status (SES) relative to that of other people in their own country on a scale from 1 (lowest) to 10 (highest). [b]This category includes participants who had not earned a bachelor's, master's, or doctorate degree. [c]Undergraduates were not asked about their highest degree; given the age of this sample, it is assumed that the vast majority had not yet earned a higher degree.

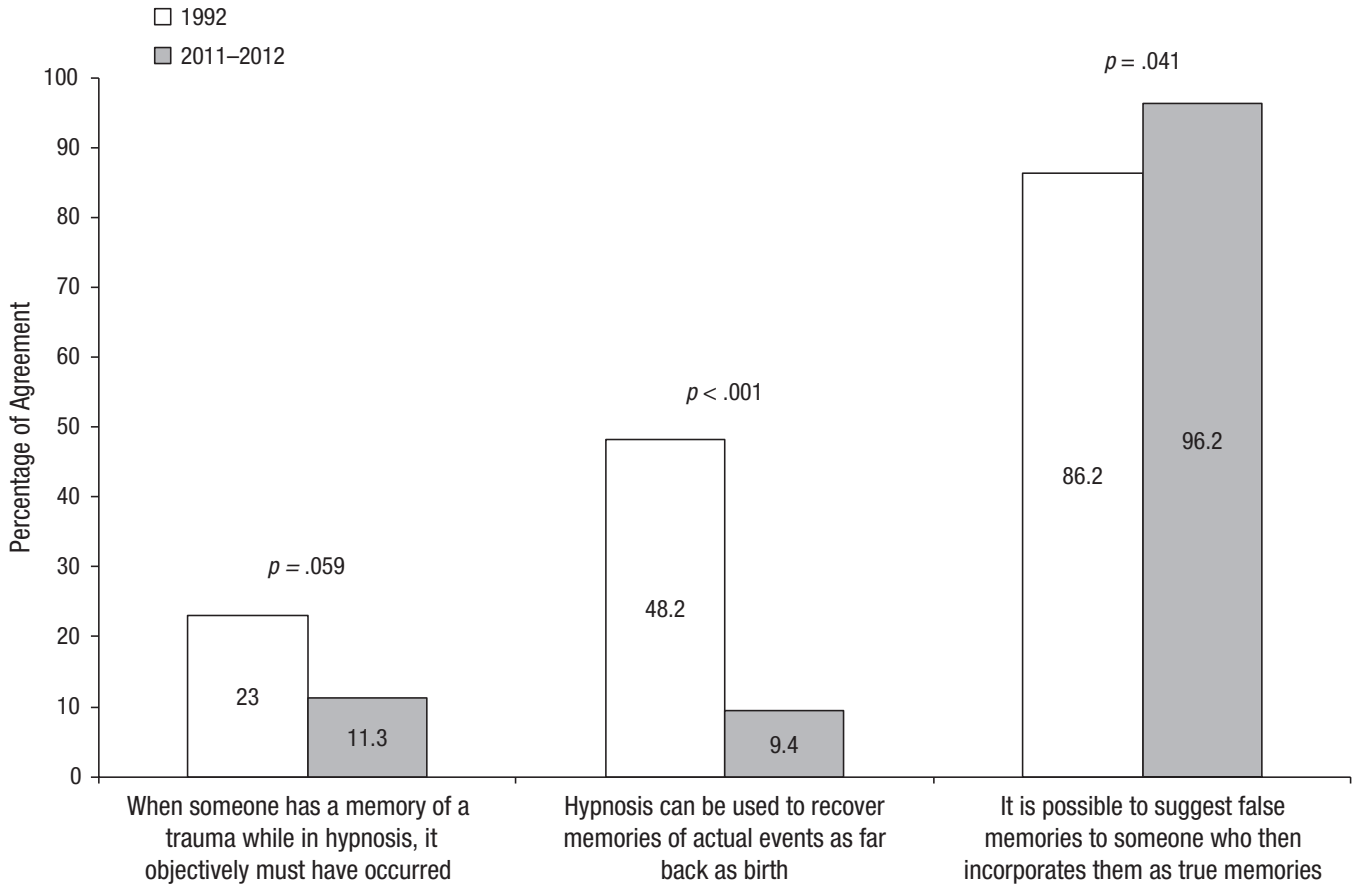

Fig. 1. Comparison of mainstream Ph.D. psychotherapists' beliefs about hypnosis and false memories in 1992 and 2011–2012. The data for 1992, reported in Yapko (1994a), are from a Ph.D. subsample (n = 208) who were recruited from psychotherapy conventions. Our data for 2011–2012 are from board-certified psychotherapists (n = 53) who were members of the American Academy of Clinical Psychology. The p values are from two-proportion z tests comparing the two groups' percentage of agreement with each of the three statements. Results for additional groups are presented in Table S2.5 in the Supplemental Material.

that actually happened was marginally lower in 2011–2012 compared with 1992 (two-sample z test, $p = .059$). The figure also shows that agreement that memories can be recovered as far back as birth has declined in this group over the same period ($p < .001$). In contrast, agreement with the statement that false memories are possible appears to have increased significantly from 1992 to 2011–2012 ($p = .041$). These results point to a shift toward greater skepticism regarding recovered memory over the past two decades.

Figure 2 presents clinical-psychology practitioners' responses to a recovered-memory vignette. Responses in 1996–1997 indicated significantly greater likelihood that the woman in the vignette was sexually abused compared with responses in 2011–2012, $t(78) = 2.97$, $p = .004$. Compared with practitioners in 2012, practitioners in 1996–1997 reported that they would be significantly more likely to assist the woman in retrieving memories of CSA, $t(665) = 4.05$, $p < .001$; to tell her that they suspect CSA, $t(665) = 4.05$, $p < .001$; and to assist her in retrieving additional CSA memories using such techniques as hypnosis, $t(665) = 2.03$, $p = .043$. These results provide converging evidence that mainstream psychotherapists and clinical psychologists are more cautious about recovering repressed memories today compared with 20 years ago.

As shown in Figure 3, ratings of the accuracy of repressed memories were not significantly different between undergraduates in 1995 and undergraduates in 2011, $t(1013) = 1.46$, $p = .14$. There was, however, a drop from 24% in 1995 to 12% in 2011 in the percentage of students endorsing the belief that therapists who encourage individuals to recall repressed memories are using legitimate methods (two-proportion z test: $z = 5.07$, $p < .001$). The percentage of students agreeing that such therapists implant false memories increased significantly from 3% to 6% ($z = 2.33$, $p = .019$), although the more recent percentage is still low. Therefore, like psychotherapists, undergraduates seem to show an increase in skepticism about recovering repressed memories.

Two possible confounds in the comparison of psychotherapists were age and gender. The samples from the 1990s had lower mean age compared with our sample (1992 sample: mean age = 44 years; 1996–1997 sample: mean age = 49.5 years; our 2011–2012 sample: mean age = 65.8 years, so these participants were about 46 in 1992 and 51 in 1996–1997). Also, the 1992–1997 sample had a higher percentage of women (51%) compared with our sample (16.1%). A possible confound in the comparison of undergraduates is that the students in 1995 were from the University of Kentucky, whereas our 2011 sample was from the University of California, Irvine. These potential confounds led us to examine whether there is converging evidence that undergraduates and clinicians became more skeptical about repressed memory over time. We explored this question in our next analysis.

As mentioned earlier, we asked participants if and when their views about repressed memory had changed (see Table 4). The responses reinforce the possibility that clinical psychologists and undergraduates have become more skeptical of repressed memory. Of the clinical psychologists and undergraduates who indicated that their views on repressed memory had changed, most reported that they had become more skeptical about repressed memory. Therefore, the apparent increase in skepticism appears to be genuine, and not confounded by age and gender.

Comparing researchers, clinicians, and laypersons today. Table 5 shows the percentage of participants, by group, who agreed to some extent with two key statements about repressed memories (for similar patterns in responses to additional repressed-memory questions, see Tables S2.6 and S2.8 in the Supplemental Material). Less than 30% of research-oriented psychologists (experimental psychologists, members of the Society for Applied Research in Memory and Cognition, members of the Society for a Science of Clinical Psychology, and clinical-psychology researchers) agreed that "traumatic memories are often repressed." In stark contrast, at least 60% of members of all other participant groups agreed with this statement. A similar pattern emerged for the statement that repressed memories can be retrieved accurately in therapy; the research-oriented groups reported less than 25% agreement, and the other groups reported at least 43% agreement. This marked split between researchers, on the one hand, and clinicians and the public, on the other, suggests that although there are indications of more skepticism today than in the 1990s, a serious divide exists between researchers and clinicians. This disjunction is clearly evident in Table 5.

On questions of how memory works, the general public and students appear to agree more with clinicians than with memory and cognition experts (members of the Society for Applied Research in Memory and Cognition). Table 5 underscores the high level of belief in repressed memory among alternative therapists, the public, and undergraduates (see also Tables S2.6 and S2.8 in the Supplemental Material). These groups tended to agree with the existence of repressed memories more than did psychoanalysts. Among practitioners of alternative therapies, such as neuro-linguistic programming, Internal Family Systems therapy, and hypnosis, more than 80% of participants agreed to some extent that "traumatic memories are often repressed," and more than half agreed that "repressed memories can be retrieved in therapy accurately."

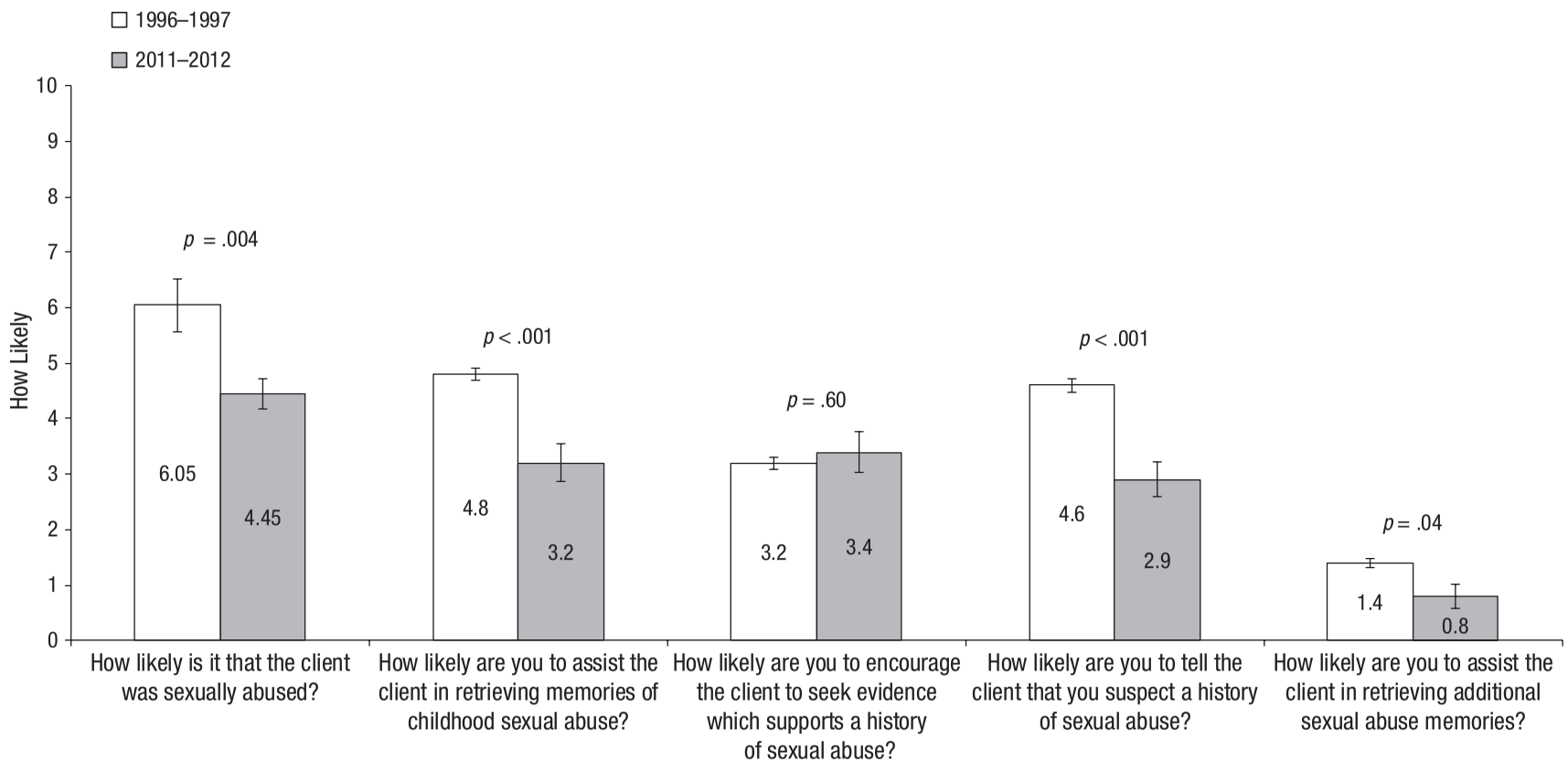

Fig. 2. Comparison of mainstream clinical-psychology practitioners' beliefs about recovered memory in 1996–1997 and 2011–2012. The data for 1996–1997 are from members of the American Psychological Association (91% with doctoral degrees; $n = 22$ for the left-most question, $n = 631$ for the other four questions), and the data for 2011–2012 are from members of the American Academy of Clinical Psychology ($n = 58$; 98% with doctoral degrees). The questions concerned a case study (Gore-Felton et al., 2000) in which a woman in therapy recovered vivid memories of sexual abuse at age 2 by her father and had not been aware of that abuse before therapy. Participants responded to each question on a Likert scale: 0 = *not likely at all*; 5 = *somewhat likely*; 10 = *extremely likely*. The p values are from t tests comparing responses to each question at the two times. Error bars represent standard errors. Results for additional groups are presented in Table S2.3 in the Supplemental Material.

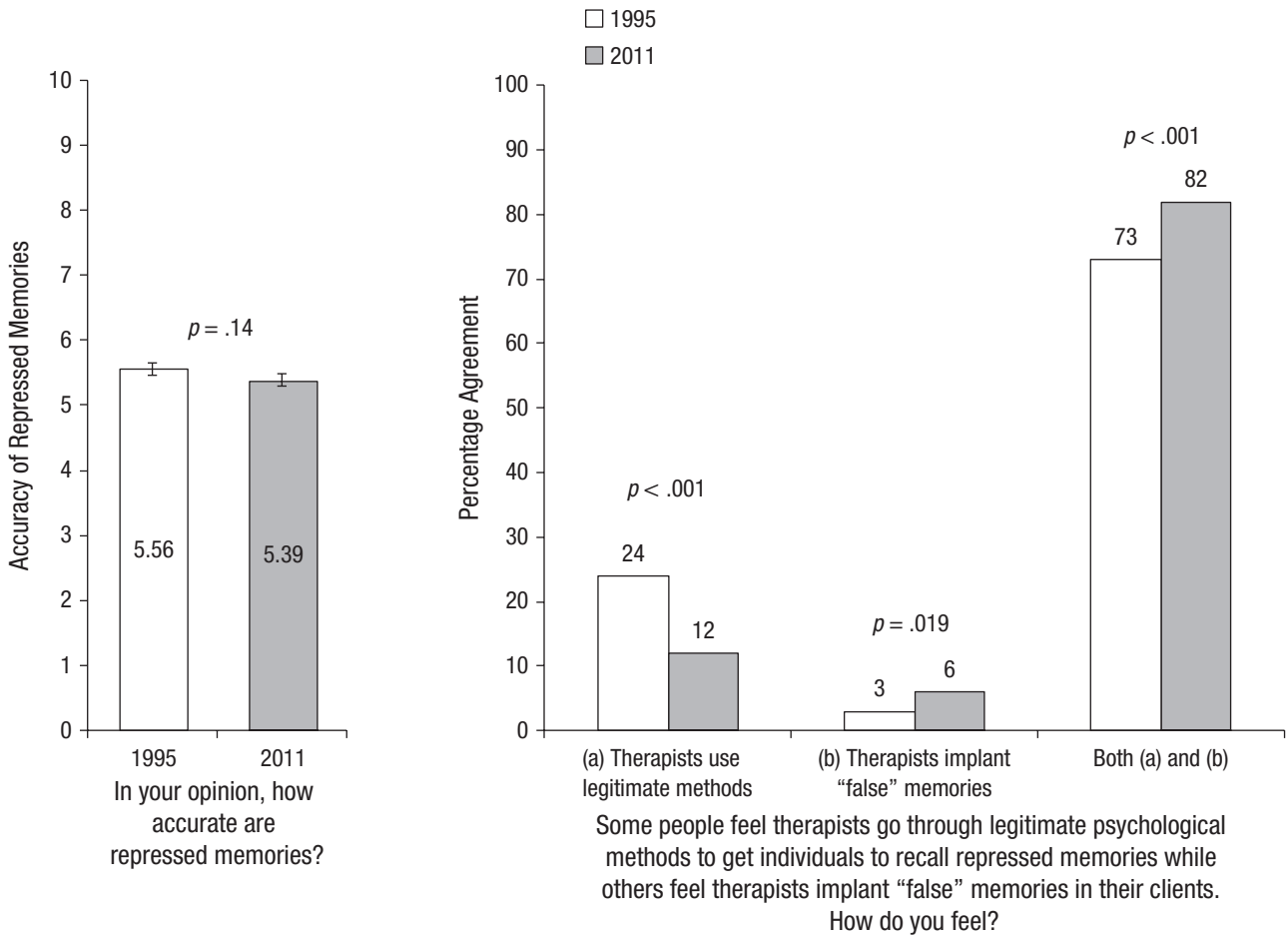

Fig. 3. Comparison of undergraduates' beliefs about repressed memory in 1995 and 2011. The data for 1995 are from Golding, Sanchez, and Sego (1996; n = 609). The data for 2011 are from the current study (n = 406). Participants first read an explanation of what a repressed memory is (see the note to Table 5). They then rated the accuracy of such memories on a Likert scale (1 = *never accurate*, 10 = *always accurate*) and indicated whether they believed therapists' methods for helping patients recall repressed memories are legitimate. The p values are from a t test (left graph) and two-proportion z tests (right graph). Error bars represent standard errors. Results for additional groups are presented in Table S2.4 in the Supplemental Material.

Table 4. Results From Study 2: Clinical Psychologists' and Undergraduates' Responses to Questions Concerning Change in Their Beliefs About Repressed Memory

Participant group	n	Percentage reporting that their beliefs about the repression of traumatic memory had changed	Percentage who now think repressed memories could be false[a]	Percentage who now think repressed memories could be true[a]	Mean year of the reported change (*SD*)
Clinical-psychology researchers	56	50.0	83.3	16.7	1997 (7.4)
Clinical-psychology practitioners	49	57.1	87.0	13.0	1987 (10.7)
Undergraduates	401	28.7	78.2	21.8	2008 (3.9)

Note: Tables S2.7 and S2.9 in the Supplemental Material reports results for additional related questions and other participant groups.
[a]These percentages were calculated including only those participants who reported a change in their beliefs.

Table 5. Results From Study 2: Percentage of Participants Indicating at Least Some Agreement With Key Statements About Repressed Memory

		Traumatic memories are often repressed				Repressed memories can be retrieved in therapy accurately			
Participant group	*n*	Slightly agree (%)	Agree (%)	Strongly agree (%)	Total (%)	Slightly agree (%)	Agree (%)	Strongly agree (%)	Total (%)
Psychology professionals with a research or science focus									
Experimental psychologists	99	16.2	10.1	1.0	**27.3**	21.2	3.0	0.0	**24.2**
SARMAC members	70	17.1	8.6	0.0	**25.7**	14.3	2.9	0.0	**17.1**
SSCP members	62	8.1	9.7	0.0	**17.7**	8.1	1.6	0.0	**9.7**
Clinical psychologists									
Researchers	62	12.9	4.8	1.6	**19.4**	11.3	4.8	0.0	**16.1**
Practitioners	58	36.2	17.2	6.9	**60.3**	32.8	10.3	0.0	**43.1**
Psychoanalysts	81	19.8	39.5	9.9	**69.1**	28.4	16.0	2.5	**46.9**
Alternative therapists									
Neuro-linguistic programming therapists	59	18.6	49.2	22.0	**89.8**	35.6	32.2	6.8	**74.6**
Internal Family Systems therapists	67	20.9	38.8	20.9	**80.6**	20.9	37.3	7.5	**65.7**
Hypnotherapists	50	22.0	32.0	28.0	**82.0**	20.0	22.0	12.0	**54.0**
Others									
Undergraduates	406	34.0	34.0	9.6	**77.6**	46.8	15.8	2.0	**64.5**
General public in the United States	112	31.2	38.4	14.3	**83.9**	40.2	34.8	2.7	**77.7**
General public in the United Kingdom	112	31.2	34.8	11.6	**77.7**	48.2	17.9	1.8	**67.9**

Note: The total percentage of participants who indicated some agreement with each of the questions is highlighted in boldface. Earlier in the survey, before these items were presented, participants had been given a definition of repressed memory as "something . . . that is so shocking that the mind grabs hold of the memory and pushes it underground, into some inaccessible corner of the unconscious. There it sleeps for years, or even decades, or even forever isolated from the rest of mental life. Then, one day, it may rise up and emerge into consciousness" (Loftus, 1993, p. 518; used in Golding, Sanchez, & Sego, 1996). The page showing these items reminded participants that repressed memory "means the person cannot remember the traumatic event due to a defense against painful content." Tables S2.1 and S2.2 in the Supplemental Material provide a fuller listing of results for these and other questions, for all participant groups. Tables S2.6 and S2.8 in the Supplemental Material present results showing similar patterns in responses to differently phrased repressed-memory questions. SARMAC = Society for Applied Research in Memory and Cognition; SSCP = Society for a Science of Clinical Psychology.

General Discussion

In Study 1, we found that undergraduates displayed high levels of belief in repressed memory and the possibility of accurate memory recovery in therapy. Those with more years of college education were more skeptical about repressed memory, and students in psychology-related majors were more likely than other students to agree that memory can be unreliable. Higher scores on our proxy measures of intelligence and rationality predicted a more skeptical pattern of beliefs. Students who scored more highly on empathy, fantasy proneness, and absorption were less skeptical about repressed memory.

In Study 2, which compared beliefs from the 1990s and 2011–2012, we found that undergraduates and mainstream psychotherapists showed increased skepticism concerning repressed memory over time. Despite this apparent attitudinal change, a large percentage of nonresearchers endorsed the validity of repressed memories, to some degree, and endorsed their therapeutic retrieval. Notably, we found a wide rift between the beliefs of psychologists with a research focus and those of practitioners and nonprofessionals.

Study 2 demonstrates a need for dissemination of the findings of memory research, and Study 1 points to individual differences that might be considered when crafting dissemination efforts. One could develop educational content that is appealing and understandable to people of varying levels of a characteristic that predicts memory beliefs (e.g., critical thinking, empathy). Also,

research could investigate whether memory beliefs can be influenced by modifying individual difference characteristics that are relatively malleable. If so, teaching methods that target these characteristics could be implemented in parallel with dissemination of memory research.

One potential methodological limitation of these studies is that participants were self-selected. It is possible that people who did not respond to requests to complete the survey hold different beliefs about memory than those who did. Given our main results, the largest concern would be that repressed-memory skeptics might have been most likely to volunteer in the research-related groups, and nonskeptics might have been most likely to volunteer in the groups containing practitioners. Nevertheless, the possibility of this pattern occurring simultaneously across the multiple and diverse professional groups we measured seems unlikely. A related potential limitation is the possibility of differences in the types of psychotherapists, undergraduates, or both, in the samples over time. Nevertheless, we found comparable changes in skepticism over time across multiple items and groups (i.e., two independent groups of Ph.D. psychologists and a group of undergraduates). Moreover, most psychologists and undergraduates who said they had changed their beliefs about repressed memory reported shifts toward increased skepticism. Finally, a limitation of our analysis of individual difference predictors of memory beliefs in Study 1 is that undetected third variables could have been responsible for the associations.

The scientist-practitioner gap (Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, in press; Tavris, 2003) is a concern in any discipline that focuses on the treatment of clients. At least some of the sharp differences in memory beliefs that we identified may be both an effect and a cause of the broader scientist-practitioner gap in mental health. Indeed, survey data suggest that many practitioners rate clinical experience, intuition, and consistency of clinical observations with their theoretical orientation as more important than published research in informing their treatment decisions (Pignotti & Thyer, 2012; Stewart & Chambless, 2007; von Ransom & Robinson, 2006).

One potential remedy for narrowing the gap between researchers and practitioners in their memory beliefs is to encourage a dialogue between these groups. Nevertheless, this approach may have its limits, especially given that some clinicians and researchers may disagree fundamentally on what constitutes adequate "evidence" (see Lilienfeld et al., in press). Some clinicians may view highly confident self-reports of memory recovery as prima facie evidence for the accuracy of repressed memories, whereas most researchers presumably view controlled research as required for such an inference.

A potentially more fruitful long-term approach may be to focus the education of students and trainees on the science of memory, including repressed memory. In this respect, the broader dissemination of basic and applied memory research within graduate programs in clinical psychology and training programs in other mental-health professions may be a helpful step, although research will be needed to determine the effectiveness of this approach for narrowing the research-practice gap.

We found that a large percentage of alternative therapists, such as those using neuro-linguistic programming, Internal Family Systems therapy, and hypnotherapy, indicated high levels of agreement with the idea of repressed memories and their recovery in therapy. These findings suggest that the memory wars are not over. Nevertheless, these battles may now be limited largely to discrete pockets of practicing clinicians, especially those with specific theoretical views regarding the nature of memory. In particular, both Internal Family Systems therapists, who accept the view that the mind can house multiple indwelling identities, each with its own store of episodic memories, and hypnotherapists, many of whom place credence in the causal influence of unconscious memories, may be positively disposed toward the use of techniques designed to unearth ostensibly recovered recollections.

The debate regarding the existence of repressed memories and the reliability of memory can be taxing given the intense feelings, such as injustice, that are felt on both sides. Nevertheless, this issue bears important ramifications for memory research, as well as for the translation of such research into the therapy room and courtroom. In this respect, a better understanding of the nature and scope of researchers' and clinicians' differing views regarding memory is an essential first step toward narrowing the persistent scientist-practitioner gap.

Author Contributions

L. Patihis developed the study concept. L. Patihis, L. Y. Ho, and E. F. Loftus contributed to the study design. Testing and data collection were performed by L. Patihis and L. Y. Ho. L. Patihis and I. W. Tingen performed the data analysis and interpretation under the supervision of E. F. Loftus and S. O. Lilienfeld. L. Patihis, S. O. Lilienfeld, L. Y. Ho, and I. W. Tingen drafted the manuscript, and all five authors provided critical revisions. All authors approved the final version of the manuscript for submission.

Acknowledgments

For assistance during data collection, we thank Stephany Debski, Stephanie Martinez, Patricia Place, and Maryanne Garry and Kazuo Mori (both from the Society for Applied Research in Memory and Cognition).

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information may be found at http://pss.sagepub.com/content/by/supplemental-data

References

Bikel, O. (Director). (1995). Divided memories [Television series episode]. In O. Bikel (Executive producer), *Frontline*. Boston, MA: Public Broadcasting Service.

Blume, E. S. (1990). *Secret survivors: Uncovering incest and its aftereffects in women*. New York, NY: Wiley.

Crews, F. (1995). *The memory wars: Freud's legacy in dispute*. London, England: Granta Books.

Dammeyer, D. D., Nightingale, N. N., & McCoy, M. L. (1997). Repressed memory and other controversial origins of sexual abuse allegations: Beliefs among psychologists and clinical social workers. *Child Maltreatment*, *2*, 252–263.

Frey, M. C., & Detterman, D. K. (2004). Scholastic assessment or *g*? The relationship between the Scholastic Assessment Test and general cognitive ability. *Psychological Science*, *15*, 373–378.

Freyd, J. J. (1994). Betrayal-trauma: Traumatic amnesia as an adaptive response to childhood abuse. *Ethics & Behavior*, *4*, 307–329.

Garry, M., Loftus, E. F., & Brown, S. W. (1994). Memory: A river runs through it. *Consciousness and Cognition*, *3*, 438–451.

Golding, J. M., Sanchez, R. P., & Sego, S. A. (1996). Do you believe in repressed memories? *Professional Psychology: Research and Practice*, *27*, 429–437.

Gore-Felton, C., Koopman, C., Thoresen, C., Arnow, B., Bridges, E., & Spiegel, D. (2000). Psychologists' beliefs and clinical characteristics: Judging the veracity of childhood sexual abuse memories. *Professional Psychology: Research and Practice*, *31*, 372–377.

Hassler, P. (Producer). (1994). Memories/nightmare in Haiti/TKO [Television series episode]. In D. Hewitt (Executive producer), *60 minutes*. New York, NY: CBS News Productions.

Heaps, C., & Nash, M. (1999). Individual differences in imagination inflation. *Psychonomic Bulletin & Review*, *6*, 313–318.

Holmes, D. S. (1990). The evidence for repression: An examination of sixty years of research. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality theory, psychopathology, and health* (pp. 85–102). Chicago, IL: University of Chicago Press.

Lilienfeld, S. O., Ritschel, L. A., Lynn, S. J., Cautin, R. L., & Latzman, R. D. (in press). Why many clinical psychologists are resistant to evidence-based practice: Root causes and constructive remedies. *Clinical Psychology Review*.

Loftus, E. (1993). The reality of repressed memories. *American Psychologist*, *48*, 518–537.

Magnussen, S., Andersson, J., Cornoldi, C., De Beni, R., Endestad, T., Goodman, G. S., . . . Zimmer, H. (2006). What people believe about memory. *Memory*, *14*, 595–613.

Magnussen, S., & Melinder, A. (2012). What psychologists know and believe about memory: A survey of practitioners. *Applied Cognitive Psychology*, *26*, 54–60.

Maran, M. (2010). *My lie: A true story of false memory*. New York, NY: Wiley.

Merckelbach, H., Horselenberg, R., & Muris, P. (2001). The Creative Experiences Questionnaire (CEQ): A brief self-report measure of fantasy proneness. *Personality and Individual Differences*, *31*, 987–996.

Merckelbach, H., & Wessel, I. (1998). Assumptions of students and psychotherapists about memory. *Psychological Reports*, *82*, 763–770.

Nathan, D. (2011). *Sybil exposed*. New York, NY: Free Press.

Pignotti, M., & Thyer, B. A. (2012). Novel unsupported and empirically supported therapies: Patterns of usage among licensed clinical social workers. *Behavioural and Cognitive Psychotherapy*, *40*, 331–350.

Simons, D. J., & Chabris, C. F. (2011). What people believe about how memory works: A representative survey of the U.S. population. *PLoS ONE*, *6*(8), e22757. Retrieved from http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0022757

Simons, D. J., & Chabris, C. F. (2012). Common (mis)beliefs about memory: A replication and comparison of telephone and Mechanical Turk survey methods. *PLoS ONE*, *7*(12), e51876. Retrieved from http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0051876

Stewart, R. E., & Chambless, D. (2007). Does psychotherapy determine treatment decisions in private practice? *Journal of Clinical Psychology*, *63*, 267–283.

Tavris, C. (2003). The widening scientist-practitioner gap: A view from the bridge. In S. O. Lilienfeld, J. M. Lohr, & S. J. Lynn (Eds.), *Science and pseudoscience in clinical psychology* (pp. ix–xvii). New York, NY: Guilford Press.

Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, *83*, 268–277.

von Ransom, K. M., & Robinson, K. E. (2006). Who is providing what type of psychotherapy to eating disorder clients? A survey. *International Journal of Eating Disorders*, *39*, 27–34.

West, R. F., Toplak, M. E., & Stanovich, K. E. (2009). Heuristics and biases as measures of critical thinking: Associations with cognitive ability and thinking dispositions. *Journal of Educational Psychology*, *100*, 930–941.

Wise, R. A., Safer, M. A., & Maro, C. M. (2011). What U.S. law enforcement officers know and believe about eyewitness factors, eyewitness interviews and identification procedures. *Applied Cognitive Psychology*, *25*, 488–500.

Wright, D., & Loftus, E. F. (1999). Measuring dissociation: Comparison of alternative forms of the dissociative experiences scale. *American Journal of Psychology*, *112*, 497–519.

Yapko, M. D. (1994a). Suggestibility and repressed memories of abuse: A survey of psychotherapists' beliefs. *American Journal of Clinical Hypnosis*, *36*, 163–171.

Yapko, M. D. (1994b). *Suggestions of abuse: True and false memories of childhood sexual trauma*. New York, NY: Simon & Schuster.