The Effects of Memory Recovery Techniques on Jurors' Perceptions of Recovered Memories

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Abstract

The current study examined the impact of memory recovery techniques (guided imagery and dream interpretation) on mock jurors' perceptions of recovered memories. Participants (N = 181) were randomly assigned to read one of four vignettes representing a therapist who uncovered memories of child sexual abuse in an adult female client using guided imagery, dream interpretation, technique concealed, or memories were continuous as opposed to recovered. Participants then responded to a series of questions regarding plaintiff credibility, defendant guilt, and external influences. Lower ratings of plaintiff credibility and defendant guilt emerged, along with higher ratings of external influence when guided imagery or dream interpretation was used by the therapist compared to when the technique was concealed. The same pattern of findings held when the dependent variables of interest reflected *credible vs. not credible* and *guilty vs. not guilty* decisions. The current study highlights the necessity of informing jurors as to the processes by which memories are recovered.

Keywords: jurors' perceptions, recovered memories, repressed memories, guided imagery, dream interpretation

1. Introduction

Understanding the mechanisms of the development of false memories of traumatic events is an important research endeavor given that such memories commonly appear in legal contexts, in part due to large numbers of lawsuits filed against parents (Loftus, 1993; Wakefield & Underwager, 1992). A common avenue by which therapists create false memories of traumatic events occurs via the use of memory recovery techniques events (see Lynn, Krackow, Loftus, Lock, & Lilienfeld, 2015, for a review). The basic tenets of a theory of the creation of recovered memories proposed by Lynn et al. (2015) begin with assumptions held by a subset of therapists, namely that memories of traumatic experiences must be uncovered and processed in therapy in order for the client's psychological symptoms to dissipate. Memory recovery therapists believe that certain psychological symptoms are indicative of a history of childhood maltreatment. As such, according to survey data, therapists inside and outside of the United States engage in memory recovery procedures such as hypnosis, use of imagery/imagination, dream interpretation, age regression including hypnotic age regression, bibliotherapy, and symptom interpretation (Andrews et al., 1999; Ost, Wright, Easton, Hope, & French, 2013; Poole, Lindsay, Memon, & Bull. 1995; Yapko, 1994; see Lynn et al., 2015, for a review). Implementation of the aforementioned techniques is often accompanied by therapist suggestion that maltreatment occurred along with verbal statements that create expectancies denoting that recovering specific instances of maltreatment is plausible. The memories are created, but a source monitoring failure occurs in that the client does not recognize that the source of the memories is the therapist. Therefore, the client comes to confidently believe the memory, in part because a byproduct of these techniques is that they increase confidence. This belief that memory recovery is necessary to reduce psychological symptoms is held despite data showing that participation in memory recovery therapy can be associated with negative life events and a reduction in the client's quality of life (Loftus, 1997).

Indeed, a large body of research shows that imagination and imagery-based techniques, including guided imagery, create false of memories in the laboratory (e.g., Herndon, Myers, Mitchell, Kehn, & Henry, 2014; Hyman & Pentland, 1996; Mazzoni & Memon, 2003). In other research studies, imagination has increased perceptions of the likelihood of occurrence of previously denied events (Sharman & Barnier, 2008; Sharman & Scorbia, 2009). Research also demonstrates similar results using dream interpretation. Namely, dream interpretation can increase adults' perceptions of the likelihood of occurrence of previously denied events of previously denied childhood

events (Guiliano & Loftus, 1998; Mazzoni, Lombardo, Malvagia, & Loftus, 1999) or can create false memories, including those of potentially traumatic childhood experiences (Mazzoni & Loftus, 1996; Mazzoni, Loftus, Seitz, & Lynn, 1999).

Despite the large body of literature on the mechanisms of false memory creation, little published research exists on how jurors perceive memory recovery techniques used by psychotherapists. Bottoms, Shaver, and Goodman (1996) examined jurors' perceptions of memories of satanic ritualistic abuse which commonly originate in psychotherapy after the use of the same suspect memory recovery techniques as described above including guided imagery (Bottoms & Davis, 1997). However, given that the focus of their study was designed to answer other research questions, they did not provide mock jurors with information about how the memories of satanic ritualistic abuse may have originated.

One important research question becomes whether mock jurors perceive that recovered memories can be created via external influences, such as by clinicians' use of memory recovery techniques. If so, are perceptions of the alleged victims' credibility and defendant's guilt impacted? If so, it would be expected that ratings of victim credibility may be diminished and defendant guilt may be decreased compared to a case in which the memory recovery techniques, guided imagery and dream interpretation to a naive recovered memory technique control condition. To be certain that any effects were not due solely to the presence of recovered memories, as opposed to enduring memories of child sexual abuse, a continuous memory condition was included. This continuous memory condition was compared to a guided imagery condition and to a dream interpretation condition.

2. Method

2.1 Participants

Data are based on 181 participants; 52% male (n = 94); mean age 38, age range = 18 to 78 years with the distribution per condition as follows: naive recovered memory control condition (n = 44); continuous memory control condition (n = 60); guided imagery condition (n = 42); and dream interpretation condition (n = 35). Data from an additional 15 participants were not included in the analyses due to random responding and reporting that they were not U.S. citizens (to decrease the possibility that data from people outside of the U.S. was included in the analyses given that legal norms may differ in other countries). Participants self-identified as primarily Caucasian (80.7%, n = 146) with 7.2 % (n = 13) identifying as Asian, 6.1% (n = 11) Hispanic, 4.4% (n = 8) African American, 1.1% (n = 2) Biracial, and .6% (n = 1) opted not to respond to the question.

2.2 Procedure

This methodology is based on the general methodology developed by Gail Goodman and Jonathan Golding (Goodman, Golding, Helgeson, Haith, & Michelli, 1987). Participants were recruited through Amazon Mechanical Turk® for a study on jurors' perceptions of memories. After agreeing to participate via an online consent, participants were randomly presented with 1 of 4 scenarios representing different experimental conditions. Note that unequal numbers of participants resulted from the above-described reasons for elimination as well as incomplete responding thereby necessitating elimination. Portions of these scenarios were previously used in Nunley and Krackow (2014). The first scenario represented a "naive recovered memory control condition" in which a female defendant recovered memories of childhood sexual maltreatment during psychotherapy. The maltreatment occurred between the ages of 4 and 7 while her mother was out of the home on business. In this naive recovered memory control condition the method of memory recovery used by the psychotherapist was concealed from the participants. This baseline information about the client appeared verbatim throughout all scenarios, but information about the nature of the memories or memory recovery technique used to recover the memories varied across scenarios. The second condition, a "continuous memory control condition", contained the identical information except was amended such that the memories of the maltreatment endured from childhood through the present. This condition controlled for the effects of recovered memories. The third condition was a "guided imagery condition" in which the client depicted in the scenario recovered the memories through the therapist's use of guided imagery. This scenario included a description of guided imagery that was based on Malpass and Devine (1981). In the fourth condition, a "dream interpretation condition", the scenario was identical to scenario 3 except the therapist used dream interpretation to recover the memories. The description of dream interpretation was based on the work of Mazzoni, Lombardo et al. (1999) with a portion of the description taken verbatim. As in our previous studies (Nunley & Krackow, 2014; Tessier & Krackow, 2013), participants were asked to "approach this study as if you are a juror asked to deliberate on the about to be described case".

Following the reading of the scenario, participants were asked 2 questions requiring responses that specified the crime committed and the relationship of the alleged perpetrator to the defendant to ensure that they attended to the content of the scenarios (used in Nunley & Krackow, 2014; Tessier & Krackow, 2013). All participants responded accurately to these questions. These questions were followed by a series of 3 questions regarding the prosecuting witnesses' credibility (trustworthy, credible, believable); 3 questions regarding defendant guilt, (guilty; believe the defendant; how responsible is the defendant for the act in question), and 1 question regarding the extent to which the memories were created by external influences (i.e., the therapist) with responses delineated via a likert-type rating scale with 1 = to not at all, 10 = to there is no doubt in my mind regarding the dependent variable of interest, most of which were previously used in Nunley and Krackow (2014); Tessier and Krackow (2013), or based on Orcutt, Goodman et al. (2003). In addition, participants responded to one dichotomous question regarding their appraisal of defendant guilt (guilty vs. not guilty) and one regarding prosecuting witness credibility (credible vs. not credible) as previously used in Nunley and Krackow (2014); Tessier and Krackow (2013). This was followed by a series of demographic questions and debriefing that included the offer of counseling resources should participants be upset by the content of the study. The study was approved by the West Virginia University Institutional Review Board.

3. Results

3.1 Prosecuting Witness Credibility

See Table 1 for means and standard deviations. This variable was comprised of the sum of the mean ratings of prosecuting witness' trustworthiness, credibility, and believability previously used in Nunley and Krackow (2014); Tessier and Krackow (2013), and yielded a high inter-item correlation (Cronbach's $\alpha = .95$). A One-Way ANOVA followed by Bonferroni corrected post-hoc Tukey *B* tests revealed that there were overall group differences in prosecuting witness credibility, F(3, 177) = 11.90, p = .001. Prosecuting witness credibility was significantly diminished in the guided imagery condition compared to the naive recovered memory control condition (p = .001, d = 1.14), and when the guided imagery condition was compared to the continuous memory control condition when compared to the naive recovered memory control condition (p = .008, d = .65). Prosecuting witness credibility was lower in the dream interpretation compared to the continuous memory control condition when dream interpretation was compared to the continuous memory control condition (p = .001, d = 1.09), with the same pattern emerging when dream interpretation was compared to the continuous memory control condition (p = .007, d = .64). No significant differences were revealed between the two control conditions (ns, d = .42). The guided imagery versus dream interpretation comparisons will not be reported given that their lack of theoretical or practical significance.

In addition, the influence of experimental condition on the dichotomous decision of credible versus not credible was examined using a binary logistic regression analysis. The full model was significant, $\chi^2 = 31.17$, df = 3, p = .001. Results showed that the full experimental model that included the four memory recovery conditions correctly predicted 70.2% of the not credible determinations, compared to the null model which correctly predicted 58.6% of the not credible determinations. Guided imagery and dream interpretation were significant predictors of a not credible determination in the experimental model compared to the continuous memory recovery condition.

The odds ratio (Exp β) was 9.5 times greater in predicting a not credible response ($\beta = 2.25$, *S. E.* = .52, 95% *CI*: 3.4-26.5) in the guided imagery condition when all variables in the model were taken into account. The odds ratio predicting a not credible response was 8.9 times greater in the dream interpretation condition ($\beta = 2.19$, *S. E.* = .54, 95% *CI*: 3.1-25.8) when all variables in the model were taken into account.

3.2 Defendant Guilt

Defendant guilt was comprised of the mean of the summary of the defendant guilt, responsible for alleged crime, and believe the defendant committed the act in question variables (Nunley & Krackow, 2014; Tessier & Krackow, 2013) with Cronbach's $\alpha = .97$. A one-way ANOVA was conducted with the defendant guilt rating as the dependent variable of interest and memory recovery condition as the independent variable, F(3,177) = 9.4. Significant differences emerged between the guided imagery condition and naive recovered memory control group (p = .001, d = 1.09) with lower defendant guilt ratings in the guided imagery group. Guided imagery yielded lower credibility ratings compared to the continuous memory control group (p = .032, d = .57). The same pattern was found for dream interpretation vs. the naive recovered memory control condition (p = .001, d = .96) and dream interpretation vs. the continuous memory control condition (p = .046, d = .52). No significant differences emerged between the naive memory control condition and the continuous memory control condition (ns, d = .40). Guided imagery versus dream interpretation comparisons will not be reported given that

they do not address research questions and hypotheses key to this general area of research. Means and standard deviations are displayed in Table 1.

A logistic regression analysis was run with defendant guilt (guilty versus not guilty) as the dependent variable of interest. The overall model was significant $\chi^2 = 16.26$, df = 3, p = .001. The naive recovered memory control condition was selected to serve as the comparison condition which was significantly higher than the guided imagery condition, and also the dream interpretation condition. Within binary logistic regression, SPSS Version 21® dictates that the comparison condition either be the condition with the highest or lowest number of participants. A not guilty verdict was correctly predicted 51.9% of the time in the null model but increased to a 63.0% correct prediction when the experimental condition variables were entered into the model. Both guided imagery significantly predicted a not guilty verdict ($\beta = 1.67$, *S. E.* = .47, *p* = .000, Exp (β): 5.3, 95% *CI*: 2.1-13.4) and dream interpretation significantly predicted a not guilty verdict ($\beta = 1.28$, *S. E.* = .47, *p* = .007, Exp (β): 3.6, 95% *CI*: 1.4-9.2).

3.3 External Influences

A One-Way ANOVA followed by Bonferroni corrected Post-Hoc Tukey B tests revealed that there were overall group differences demonstrating recognition that the prosecuting witnesses' memories were created by external influences, F(3, 177) = 12.18. Significant differences emerged between the naive recovered memory control condition and guided imagery (p = .001, d = -.84), and between the naive recovered memory control condition and dream interpretation (p = .001, d = -1.06), such that both memory recovery technique conditions were judged to be synonymous with greater influence by other people. The same held pattern held true for guided imagery vs. continuous memory control condition (p = .001, d = -.98). No significant differences emerged or approached significance between the naive recovered memory control condition (ns, d = -.07). See Table 1 for means and standard deviations.

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Table 1. Means and standard deviations for jurc	rs perceptions variables a	across memory recovery conditions
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		Prosecuting Witness Credibility ¹		Defendant Guilt ²		External Influence ³	
Condition	n	М	SD	М	SD	М	SD
NMRC	44	17.22	4.62	16.45	5.20	4.34	2.56
CMC	60	15.08	5.47	14.12	6.29	4.53	2.58
GI	42	11.58	5.24	10.83	5.06	6.45	2.45
DI	35	11.35	6.02	10.79	6.42	7.06	2.57

Note. NMRC = naive memory recovery control; CMC = continuous memory control; GI = guided imagery; DI = dream interpretation.^{1,2,3} Highest possible score equals 30, 20, and 10 respectively.

4. Discussion

The current study examined mock jurors' perceptions of recovered memories elicited by a therapist who used guided imagery or dream interpretation to create the memories. The study included two control groups—a naive memory recovery control condition in which participants were not provided with the memory recovery technique employed by the therapist and a continuous memory condition. The former controlled for memory recovery technique. The latter controlled for the nature of the memories—recovered vs. continuous.

Across both continuous and dichotomous measures, plaintiff credibility was diminished when mock jurors were notified that the therapist used guided imagery or dream interpretation to recover the memories compared to when participants were naive regarding the specifics of the memory recovery technique. Across analyses, there was striking continuity in the pattern of results that went beyond the significant effects namely that the effects were slightly stronger, as indicated by slightly higher F values, *Beta* values, and effect sizes in the guided imagery than in the dream interpretation condition. Similarly, perceptions of defendant guilt were diminished when guided imagery or dream interpretation was used by the therapist. Also, analyses using a likert-type rating revealed that continuous memories were perceived as more credible and the defendant was perceived as less guilty compared to when guided imagery or dream interpretation were used by the therapist.

In the guided imagery or dream interpretation conditions, participants perceived correctly that the memories emerged as a result of the therapist's treatment techniques. Given that the only difference between the naive memory recovery control condition scenario and the guided imagery and dream interpretation scenarios was the inclusion of the memory recovery technique and a description of the technique, this recognition was likely the mechanism responsible for the reduction in the perceptions of plaintiff credibility and defendant guilt. However, the assessment of the perception of external influences was limited to a single question. Future research should attempt to include multiple measures to assess the construct of external influences. Although it was obvious to mock jurors in this study that the guided imagery and dream interpretation were responsible for the creation of the memories, it is possible that other memory recovery techniques not studied in the current study may not be negatively perceived. These results emphasize the critical need to inform jurors of the processes by which memories are recovered. In addition, jurors may need to be informed of the research demonstrating that some techniques create false memory reports (Tessier & Krackow, 2013). Preliminary evidence implies that prosecuting witness credibility and defendant guilt may be diminished when mock jurors are informed of the detrimental nature of certain memory enhancement techniques (Tessier & Krackow, 2013). Therefore, it is critical that clinicians and expert witnesses are trained in and remain current with the empirically supported trauma assessment and treatment literature.

Finally, although not a focus of the current study, the design allowed for further examination of perceptions of credibility between continuous and recovered memories. Previous studies have found mixed results as to whether continuous memories are perceived as more credible than recovered memories (Golding, Sego, Sanchez, & Hasemann, 1995, no significant differences; Loftus, Weingardt, & Hoffman, 1993, recovered memories < continuous memories Experiments 1 & 2), but what is clear from an inspection of the means is that recovered memories are at least moderately supported (Golding et al., 1995; Golding, Sego, & Sanchez, 1996; Loftus et al., 1993). The current study found both types of memories to be similarly perceived, with moderate to moderately high levels of credibility, although the means were higher in the naive memory recovery technique condition. This may be because the public believes that adults in psychotherapy with a mental health disorder diagnosis could have forgotten episodes of child sexual maltreatment (Rubin & Berntsen, 2007).

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