Contemporary Hypnosis (1997)
Vol. 14, No. 2, pp. 132–137

MAIN PAPER

INDIVIDUAL DIFFERENCES AND THE SUGGESTIBILITY OF HUMAN MEMORY

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ABSTRACT

The present study was conducted to identify individual difference measures that correlate with memory suggestibility. An adapted version of the Gudjonsson Suggestibility Scale was used to measure student participants' suggestibility for real, distorted and entirely fabricated autobiographical statements on a questionnaire detailing recollections of their induction week. The individual suggestibility scores for each of these events were then correlated with the Inventory of Childhood Memories and Imaginings (ICMI) scale, the Dissociative Experiences Scale (DES) and the Social Desirability Scale (SDS).

Analysis indicated that both the ICMI and DES were positively correlated with suggestibility scores for misleading statements. The results also suggest that dissociation, as well as being a supposed cause of amnesia for childhood abuse, is also related to higher confidence scores for suggested events that did not occur.

INTRODUCTION

Recently there has been considerable debate concerning the 'false memory syndrome' (Loftus, 1993; Lindsay & Read, 1994). Experimental evidence has shown that memory for events can be influenced by a number of factors including post-event misleading suggestions (Loftus, 1979). More recent research has shown that it is possible to encourage individuals to construct plausible narratives of experimenter-created events when those events relate to relatively common scenarios, for example being lost in a shopping mall (Loftus & Pickrell, 1995) or a visit to hospital with an ear infection (Hyman, Husband & Billings, 1995). The recent debate has focused on whether it is possible to create, in an experimental context, 'false' memories of unfamiliar events (Pezdek, 1995). No study to date has yet shown that it is possible to encourage individuals to construct plausible narratives of suggested traumatic events such as childhood sexual abuse.

A relatively new line of research in this area is concerned with the role of individual differences. The present study was conducted to extend the research of Hyman and Billings (1995), who found that both the Creative Imagination Scale (CIS, Wilson & Barber, 1978) and Dissociative Experiences Scale (DES, Bernstein & Putnam, 1986) were significantly positively correlated with 'false memory creation' ($r = 0.36$ and $r = 0.48$ respectively). They found no correlation, however,

between 'false memory creation' and the Tellegen Absorption Scale (TES, Tellegen & Atkinson, 1974) or the Social Desirability Scale (SDS, Crowne & Marlowe, 1960).

There were two main aims of the present study. First, to identify further personality correlates of memory suggestibility. Second, to construct a methodology, based on the Gudjonsson Suggestibility Scale (GSS, Gudjonsson, 1984), that would enable a more detailed analysis of the processes involved in accepting or creating a memory for a 'false event'. This extends the work of Hyman *et al.* who used a four-point scale to classify the creation of 'false memories'. However, the present paper will focus on the results concerning the individual difference measures.

The present study investigated the relationship between memory suggestibility, using a modified GSS, and three individual difference measures, the DES, the SDS and the Inventory of Childhood Memories and Imaginings (ICMI, Wilson & Barber, 1983). The DES measures the tendency to have dissociative experiences in the normal integration of thought. This, as suggested by Hyman and Billings (1995), may leave these individuals more susceptible to accepting memories of false/suggested events as personal memories. The ICMI scale is comprised of two sub-scales: recall of childhood fantasising (childhood memories) and present state fantasizing (present state imaginings). Lynn and Rhue (1988) suggest that highly Fantasy Prone individuals demonstrate the 'occasional inability to distinguish fantasy from reality'. This may leave these individuals more vulnerable to accepting 'false memories'. For these reasons it was hypothesised that scores on the ICMI and the DES would be positively correlated with the measures of suggestibility. The Social Desirability Scale was included as a control for socially desirable responding.

METHOD

Participants

From a convenience sample of 66 first year psychology students, 35 (29 female and 6 male) completed three experimental sessions. The age of these participants ranged from 18 to 45 years old with the mean age being 21.34 years.

Measures of memory suggestibility — the baseline and recall questionnaires

Participants were asked to respond in three ways concerning their memory for events they could remember from the Psychology department's part of their first induction week at the University of Portsmouth (the induction week itself consisted of a series of administrative events and talks by members of staff concerning various aspects of the Psychology degree course). First, participants were asked to recall freely as much as possible about the induction week, which served as a baseline measure of memory for these events. The participants were then asked to complete two questionnaires. Each of these 'recall'questionnaires contained the same 15 statements detailing certain events that supposedly happened during the Psychology department's part of the induction week.

Of the 15 statements contained in each of the recall questionnaires, five concerned 'real' events, six concerned 'distorted' events and four concerned events that did not occur (referred to as 'fabricated' events). Ten of the 15 statements therefore were misleading. Participants were asked to rate their confidence for each event (on a scale of one to six, a score of one meaning 'Cannot remember' and a score of six meaning 'Clearly remember').

Suggestibility of the participants was measured in three ways employing a modified version of the GSS (Gudjonsson, 1984). First, the degree to which participants responded that they could separately recall the six 'distorted' and four 'fabricated' events (scored as 'Dist 1 or 2' and 'Fab 1 or 2' for responses to the first and second 'recall' questionaires); second, the combined score for the 10 misleading events (scored as 'Yield 1' and 'Yield 2' for responses to the first and second recall questionnaires respectively); and third the degree to which participants changed their responses on the second 'recall' questionnaire when they were told that they had made a lot of errors on the first 'recall' questionnaire (scored as 'Shift').

Scoring the recall questionnaires

All the recall confidence scores for each type of statement (real, distorted and fabricated) were combined into a final score for that type of event for each presentation of the questionnaire (e.g., 'Real 1' refers to the combined confidence scores for the real events on the first presentation of the 'recall' questionnaire).

The confidence scores for the misleading events (distorted and fabricated) were added together to provide total measures of suggestibility ('Yield') for each presentation of the questionnaire (e.g., 'Yield 2' refers to the combined confidence scores for the distorted and fabricated events on the second presentation of the 'recall' questionnaire).

Procedure

The study was divided into three sessions each separated by an interval of three weeks. In each session the questionnnaires were administered to the whole of the class who were attending a 'memory and cognition' lecture.

In session one the participants were asked in free recall to provide a baseline measure of memory for the events of the induction week. In session two the participants were asked to complete the first recall questionnaire (comprised of the 'real', 'distorted' and 'fabricated' statements), the ICMI and the DES. At the start of the third session, as required by the GSS, the participants were given negative feedback (which consisted of telling the participants that a lot of errors had been made on the first recall questionnaire) about their performance on the first recall questionnaire before being asked to complete it a second time. They were also asked to complete the SDS.

RESULTS

Analysis of the data

The confidence scores for the real, distorted (Dist) and fabricated (Fab) events and the combined scores ('Yield') for the two recall questionnaires were correlated with the personality measures using the Spearman's rank correlation.

The significant correlations are summarized in Table 1.

The Spearman's rank correlation between the memory suggestibility scores and the individual difference measures indicated several positive correlations at the $P < 0.05$ significance level. The ICMI (total) was positively correlated with 'Yield' 1 ($P = 0.008$) and 'Yield' 2 ($P = 0.007$). The ICMI (childhood memories) was positively correlated with 'Real' 1 ($P = 0.034$) and 'Yield' 2 ($P = 0.037$). The ICMI (present state imaginings) was positively correlated with 'Yield' 1 ($P = 0.008$) and 'Yield' 2 ($P = 0.034$). The DES was positively correlated with 'Fab' 1 ($P = 0.011$) and 'Fab' 2 ($P = 0.018$). No significant correlations were found with any measure for 'Real' 2, 'Dist' 1, 'Dist' 2 or 'Shift' scores.

Table 1. Spearman's rank correlation between memory suggestibility scores and individual difference measures.

	Real 1	Yield 1	Yield 2	Fab 1	Fab 2
ICMI (Total)	—	0.44**	0.45**	—	—
ICMI (Childhood Memories)	0.36*	—	0.35*	—	—
ICMI (Present State Imaginings)	—	0.44**	0.36*	—	—
DES	—	—	—	0.45*	0.42*
SDS	—	—	—	—	—

* indicates significance at the $P < 0.05$ level
** indicates significance at the $P < 0.01$ level

DISCUSSION

These results partially support the findings of Hyman and Billings (1995) regarding the correlation between the DES and 'false memory creation'. These results show that the DES is positively correlated with confidence scores for events that did not occur.

The fact that the DES was only correlated with the fabricated events (no correlation was found with the distorted events) is also noteworthy. Dissociation is often suggested as a cause of amnesia for apparent memories of abuse (Gil, 1988). These results suggest that self-reported experiences of dissociation are related to higher confidence in memories of events which did not occur.

ICMI (total), the combined score for both sections of the ICMI scale, was found to be positively correlated with confidence scores for misleading events on both presentations of the 'recall' questionnaire. When the two sections of the scale are separated however, a slightly different pattern emerges. The section of the ICMI scale that deals with recollection of childhood fantasising was positively correlated with confidence scores for the statements of 'real' events contained in the first recall questionnaire, suggesting that these individuals had better memories for the timetabled events of the induction week. However the same section of the scale was also correlated with confidence scores for the misleading statements on the second presentation of the questionnaire ('Yield' 2). This might suggest that individuals who scored highly on this dimension had unfounded confidence in their own recall. It might also suggest, of course, that these individuals simply gave higher confidence scores overall.

The second section of the ICMI scale (present state imaginings) was also correlated with confidence scores for misleading statements of events on both presentations of the questionnaire. This also suggests a link between fantasy proneness and susceptibility to misleading suggestions.

Further analysis of the confidence scores of the fabricated events revealed that these events formed two sub-groups. One sub-group, characterized by higher confidence scores, was comprised of statements of fabricated events about members of staff with whom the participants were familiar. The second sub-group, characterized by lower scores, comprised statements of fabricated events about members of staff with whom the participants were not familiar. The difference between these two sub-groups' confidence scores could be explained with reference to the source monitoring literature (see Johnson, Hastroudi & Lindsay, 1993, for a review). It could be argued

that it was the familiarity with the members of staff that convinced individuals that the fabricated event had occurred when in fact it had not.

This finding also lends support to Pezdek's (1995) argument that it is difficult to convince individuals, in an experimental context, to report details of an event that is 'script-inconsistent' (i.e., refer to events that are not familiar to the individual concerned).

The present results indicate that people who are prone to dissociation and fantasy tend to give higher confidence scores for their recall of events about which they have received misleading information. Further research is needed to establish whether these findings are reliable across different types of event and whether they can be used to discriminate individuals who are more likely to respond positively to misleading information regarding their autobiographical memories, especially memories relating to their childhood.

It has been suggested that hypnotizability is a risk factor in the creation of 'false memories' and future studies should be directed at investigating this possibility.

Future research should also address the role of context and situational variables that may be implicated in the creation of memories of events that did not occur.

ACKNOWLEDGEMENTS

The first author would like to thank Ira Hyman, Jr for his positive correspondence regarding this study and Alan Costall and Amina Memon for useful comments and advice with earlier drafts of this paper. The authors would also like to thank the two anonymous reviewers for their helpful and constructive comments on earlier versions of this article.

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