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## ‘That didn’t happen’: Memorial Consequences of False Denials for Neutral and Negative Material

### Original Paper

The current experiment assessed the memorial consequences of false denials (i.e., denying an event had happened) for neutral and negative material. 86 participants viewed neutral and negative pictures and their memory and belief for these pictures was tested. Specifically, participants were randomly assigned to three conditions: (1) Internal Denial, participants were instructed to falsely deny questions related to the pictures; (2) External Denial, participants received negative feedback from the experimenter; or (3) Control, participants were instructed to provide answers to questions they are completely sure about, and were told not to guess. A day later, participants had to rate their memory and belief once more. The most important finding was that internal denial resulted in participants falsely denying they had talked about a certain detail with the experimenter, when in fact they did. The current results indicate that denying an experienced event may adversely affects memory for the interview itself.

**Keywords:** false denials; omission; memory; valence; nonbelieved memories

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## INTRODUCTION

Research into child eyewitness testimonies is difficult because the statements are often of unknown accuracy (Bidrose & Goodman, 2000). This is usually the case in legal trials that lack objective evidence. Oftentimes, these cases are about sexual abuse. Research shows it is often hard for a child to reveal the abuse because the child does not want to hurt the offender and has difficulty discussing the abuse itself (Lyon, 1995). Thus, victims of sexual abuse often do not disclose upon their victimization and sometimes even falsely deny that they were victimized. However, it is still unclear what happens to the memories of a traumatic event when people falsely deny an event. In the current study, the goal was to examine the memorial consequences of these false denials (i.e., denying an event that actually did happen to them). To understand this phenomenon in more depth, it is important to provide more information concerning eyewitness testimonies, as they are often a source of evidence in a trial.

Oftentimes, judges and juries have to rely on eyewitness testimonies for legal decision-making when objective evidence is lacking (Smeets, Candel, & Merckelbach, 2004). During an evaluation of such testimonies, the central focus is on the accuracy, consistency and completeness (Smeets et al., 2004) of these statements. When a testimony consists of memory errors (e.g., false memories), it is frequently regarded as inconsistent and inaccurate. Therefore, many studies examining the role of memory in legal settings have focused on these false memories (i.e., a memory of an event that did not actually occur) and their underlying precursors (see Ceci & Bruck, 1993; Loftus, 2004; Otgaar, Howe, Peters, Sauerland, & Raymaekers, 2013a). There are two types of false memories that are generally distinguished: Spontaneous and suggestion-based false memories.

Spontaneous false memories are frequently induced by using a popular method called the Deese-Roediger-McDermott (DRM; Deese, 1959; Roediger & McDermott, 1995) paradigm. Here, participants receive wordlists of semantically related words (e.g., tears, fear, weep) that are all associated to a critical, so-called 'lure' word (e.g., cry). By either using recall or recognition tests, participants have to indicate whether they have heard the word. Both recall and recognition tests show that a significant number of participants falsely remember the critical lure word (see e.g., Brainerd & Reyna, 2008; Otgaar et al., 2013a).

Suggestion-based false memories are generally studied by using misinformation or implantation techniques (Loftus & Ketcham, 1991; Loftus, 2005). In the misinformation paradigm, participants are presented with stimuli and receive suggestive questions in the form

of misinformation, followed by a memory test. In the implantation paradigm, participants receive narratives of a false childhood life event ostensibly 'obtained' from their parents. Both techniques indicate that participants can falsely remember events. False memories are of importance in court because eyewitnesses can be pressed to recall elements from a crime scene or suggestive questions can be asked during interrogation. These suggestive questions can contain misinformation, which could alter one's perception and memory about the event (Lane & Zaragoza, 2007). Eyewitness errors are the most contributing factor to wrongful convictions (Saks & Koehler, 2005), hence it is no surprise that the role of memory in legal cases is of great interest among researchers.

Though research on false memories is of great importance, one might wonder whether they are always relevant in eyewitness testimonies for determining, for example, the accuracy of a testimony. Smeets and colleagues (2004) showed that the link between consistency and accuracy (i.e., consistency implies accuracy) is actually quite rare in practice. Participants were asked on two occasions to write detailed accounts of a violent movie fragment they had seen. Accounts were evaluated on accuracy, consistency and completeness. Their results showed that these three concepts seem to be independent concepts: Testimonies can be accurate but also inconsistent. On top of that, results also indicated that omission errors (i.e., leaving out information), and not false memories, accounted for most inconsistencies in testimonies. The findings demonstrated that completeness is the most problematic feature of testimonies. To conclude, omission errors, not false memories, are the most problematic feature of eyewitness testimonies. However, to date, there is virtually no empirical knowledge about the determinants of omission errors or related constructs as false denials.

False denials are likely to occur in legal cases in which, for example, there is a suspicion of child sexual abuse. Recent studies show that many victims falsely deny to having been maltreated (see Lyon, 2007; Vieira & Lane, 2013). Scientific case studies of childhood sexual abuse (see e.g., Bidrose & Goodman, 2000; Leander, Christianson, & Granhag, 2007) compare victim testimonies with available objective evidence (e.g., video and/or audiotapes, confession of offender). Looking at the level of support for the allegations made by the victims, these studies have shown that although the testimonies contain accurate details, victims often provide false denials.

There are different reasons underlying false denials: the perpetrator repeatedly tells the victims that the event did not occur, the event itself can elicit emotions of fear when the perpetrator is a stranger or when the perpetrator is familiar, or that the victim wants to protect the offender (Leander et al., 2007; Lyon, 1995). Therefore, victims of child sexual abuse often

delay disclosing the abusive event for several years. In such a period, strategies as false denials are often used to withhold information of the traumatic incident (Lamb & Edgar-Smith, 1994). However, the most prominent reason for false denials is likely to be shame (Leander et al., 2007). Victims of sexual abuse may be too embarrassed to talk about the details of the event.

What happens when victims repeatedly falsely deny to have experienced an event and then suddenly report about the event? Curiously, the empirical findings on memorial consequences of false denials are extremely limited. Vieira and Lane (2013) are one of the few that studied how false denials affect memory. In their study, participants viewed pictures of simple objects, and received the instruction to repeatedly lie (i.e., false denials) or tell the truth about these pictures by describing them or denying seeing them. Two days later, participants had to indicate honestly if the presented picture was studied, and if they had to lie or tell the truth during session 1. The results of the false denials condition indicated that falsely denying studied pictures resulted in decreased memory performance whereas falsely describing unstudied pictures enhanced memory performance. Hence, according to this study, false denials can have a negative effect on memory performance.

In a recent study by Otgaar, Howe, Memon, and Wang (2014a), the mnemonic effects of false denials were examined in children and adults. Participants viewed a video. Afterwards, participants were randomly assigned to one of three groups. In the control group, participants were instructed to answer questions they were absolutely sure about, without guessing. In the forced confabulation condition, participants were forced to answer all questions, even if this meant they had to guess. In the false denial condition, participants had to falsely deny in response to each question. A week later, participants received a source memory test, indicating their memory and belief once more. Interestingly, participants in the false denials condition did not report having talked to the experimenter about a certain detail, when in fact they did. This might suggest that previous false denials have adverse effects on memory performance. The results imply that denying experienced events is not a good strategy during an interview setting with regard to sexual abuse, because false denials seems to have adverse effects on memory performance.

The current experiment will include an internal denial condition (in line with Vieira & Lane, 2013; and Otgaar et al., 2014a) and an external denial condition. The external denial condition is relevant from a theoretical perspective, because it is informative to know whether suggestions can alter one's memory (i.e., make memory less accessible or less likely to be reported). From a practical perspective, it is relevant for legal cases (e.g., child sexual abuse cases), in which perpetrators repeatedly tell their victim that certain events did not happen. A

recent study by Scoboria, Boucher and Mazzoni (2015) showed that people withdraw their belief in autobiographical memories when receiving social feedback from an external source. This leads to developing non-believed memories (i.e., a memory you no longer believe in) and hence altering memory. The use of such an external denial condition is applied in omission studies, which matches the aspect of false denials (see Merckelbach, van Roermund, & Candel, 2007).

A subsidiary aim of the current experiment was to examine the memorial impact of false denials for negative and neutral stimuli. Because in legal cases, the-to-be-reported event (e.g., child sexual abuse) is likely to be negative, a distinction is made between neutral and negative stimuli. Studies using stimuli of different valence and which resemble omission research are studies about directed forgetting or retrieval-induced forgetting (RIF; Dehli & Brennen, 2009). These studies show contradictory results. In such research, participants receive stimuli of different valence (i.e., positive, neutral, negative). Participants receive the instruction to forget previous trials because these were merely practice trials (directed forgetting studies), or participants have to determine whether the stimuli were presented in the study phase, whilst not cued with the category (RIF studies). Some studies found better recall for positive stimuli (see e.g., Harris, Sharman, Barnier, & Moulds, 2010; Power, Dalgleish, Claudio, Tata, & Kentish, 2000), others found better recall for negative stimuli (McNally, Clancy, Barrett, & Parker, 2004; Minnema & Knowlton, 2008). Talmi and Moscovitsch (2004) demonstrate that negative information is differently organized in memory than neutral information. Meaning, negative stimuli is more interrelated than neutral stimuli. As a result, negative stimuli might increase the possibility that other negative memories become activated and hence memory for negative stimuli is enhanced.

Taken together, the current study will address the following three research questions: First, to what extent do false denials have an effect on memory performance? Second, what is the difference between the effect of external and internal false denials on memory? Third, what is the impact of emotional valence on memory performance? Based on earlier experiments described above, it is hypothesized that false denials might lead to worse memory performance, i.e., more false denials of true events and hence deteriorating memory. Additionally, if the instruction to falsely deny or receive external false denials is associated to social feedback, false denials might lead to the formation of non-believed memories, thus memory performance is hypothesized to be worse for external false denials than for internal false denials. Finally, it is hypothesized the effect of false denials might be stronger for neutral stimuli, compared to negative stimuli.

## METHOD

### Participants

In the current experiment, 86 participants were tested ( $M_{\text{age}} = 21.16$ ,  $SD = 2.53$ , range 18-31; 72 women). Participants were undergraduate students from the Faculty of Psychology and Neuroscience, Maastricht University. They received a credit point or a €7.50 financial compensation for their participation. The experiment was approved by the standing ethical committee of the Faculty of Psychology and Neuroscience, Maastricht University.

### Materials

The stimuli are pictures derived from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 2005). The pictures represent emotionally-negative and neutral scenes. All pictures were previously rated by using a 9-point scale (1 = negative; 9 = positive) of the Self-Assessment Manikin (SAM; Lang et al., 2005). The pictures were chosen based on their valence, not too many details present, central position of the critical item and if the critical item was clear to see. A paired samples  $t$ -test indicates that the chosen negative and neutral pictures significantly differed in valence ( $M = 2.75$ ,  $SD = 0.74$  and  $M = 5.00$ ,  $SD = 0.38$  respectively,  $t(11) = 7.56$ ,  $p < 0.001$ ), arousal ( $M = 5.14$ ,  $SD = 0.76$  and  $M = 3.23$ ,  $SD = 0.71$  respectively,  $t(11) = -5.50$ ,  $p < 0.001$ ), and dominance ( $M = 4.10$ ,  $SD = 0.70$  and  $M = 5.85$ ,  $SD = 0.47$  respectively,  $t(11) = 7.99$ ,  $p < 0.001$ ). Previous research used some of the selected pictures from the IAPS database (see Humphreys, Underwood, & Chapman, 2010). The pictures were presented by using E-Prime, viewed on a 17-inch computer screen. The IAPS pictures were shown for 5000 ms with 1000 ms ISI (in accordance with Vieira & Lane, 2013).

### Design and Procedure

The current experiment employed a 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) split-plot design. The variable condition is a between-subjects factor and the variable valence is a within-subjects factor. Participants were randomly assigned to the different conditions and were tested in laboratory rooms at the psychology faculty at Maastricht University. Valence was provided in a counterbalanced order.

The study contains two sessions separated by a 24-hour interval. During the first session, participants were presented with 12 negative and 12 neutral IAPS pictures, presented in

a blocked order. Half of the participants first viewed the negative pictures, followed by the neutral pictures. The other half of the participants received the reverse order. Participants received the instruction to look carefully at the pictures, because they would receive some questions about the pictures. After viewing the IAPS pictures, participants received a short distractor task (playing Tetris), lasting for 5 minutes. Then, participants' baseline memory and belief for details was measured. Participants were asked ten items related to details present in the pictures (e.g., What was the woman at the office doing?), and they had to indicate their belief (1= definitely not seen, 8= definitely seen) and memory (1=no memory at all, 8=clear memory) for the presented question. These questions were derived from the Autobiographical Memory and Belief Questionnaire (ABMQ; Scoboria, Mazzoni, Kirsch, & Relyea, 2004), because research has shown people can develop so-called non-believed memories: Memories of which the belief in the occurrence of the event is undermined (Otgaar, Scoboria, & Mazzoni, 2014b). These non-believed memories are most likely to occur when people receive feedback suggesting a certain event did not occur (Otgaar, Scoboria, & Smeets, 2013b).

All questions were asked in chronological order of the picture slides. Hereafter, participants received a 5-minute filler task by playing Bejeweld. To finish the first session, participants ended with an event questionnaire, consisting of ten open-ended questions. Six questions were asked during the baseline questioning (ABMQ; i.e., true-event questions: Which jewellery did the woman wore?). The remaining four questions pertained to false details (i.e., who was lying in bed?), not asked during the ABMQ. For this event questionnaire, participants in the Internal Denial condition ( $n = 29$ ) were instructed to deny in response to each question (e.g., 'What object was between the blue T-shirt and the jeans?' Answer: 'There was no object between the blue T-shirt and the jeans'). Participants in the External Denial condition ( $n = 29$ ) received negative feedback to three true event questions and two false event questions from the experimenter (e.g., as response to the participant's answer: That [specific detail] was not present in the picture, think about this for tomorrow). Participants in the Control condition ( $n = 28$ ) were instructed to provide answers to questions they are completely sure about, and they were told not to guess. All participants received the same event questions.

The second session took place the next day. This session started by informing to test the memory of the pictures. Participants received a source memory and belief test, containing twelve items each consisting of two closed questions (i.e., yes/no), in chronological order. For example: (a) "When we talked yesterday, did we talk about which jewellery the woman wore?" [Person question]; (b) "When you viewed the pictures, did you see which jewellery the woman wore?" [Picture question]. Then, participants had to rate their memory and belief once more.

The source memory items contained six true event questions asked during session 1 (derived from the event questionnaire), two true events not asked in session 1 (derived from the ABMQ), two false event questions asked in session 1 (false event questions from the event questionnaire), and two false event questions not asked during session 1. Participants were debriefed after all participants were tested.

## RESULTS

### Source Monitoring

Memory and belief ratings of the pictures were investigated at Session 2. For belief ratings for the picture questions, a 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the belief ratings at Session 2. No main effect of valence, condition or interaction effect was found (all  $ps > .05$ ).

For the memory ratings for the picture questions, a 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted. No main effect of valence, condition or interaction effect was present (all  $ps > .05$ ).

Another analysis measured the differences in the number of correct answers of the person questions (i.e., ‘When we talked yesterday, did we talk about which jewellery the woman wore?’) about the interview itself. A 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the number of correct answers on person questions. No main effect of valence,  $F(1, 83) = 2.08, p = .15, \eta^2_{\text{partial}} = .02$ , or an interaction effect,  $F(2, 83) = 1.02, p = .36, \eta^2_{\text{partial}} = .02$ , emerged. A main effect of condition was obtained,  $F(2, 83) = 8.81, p < .001, \eta^2_{\text{partial}} = .17$ . That is, participants in the External Denial condition ( $M = 4.93, SD = .09$ ) and participants in the Control group ( $M = 4.91, SD = .10$ ) answered questions correctly more often than participants in the Internal Denial group ( $M = 4.43, SD = .09$ ).

### False Denials

The primary interest was to examine the memorial consequences of false denials on memory performance. The first analysis pertained to whether falsely denying details might cause participants to report they did not talk about the certain details when in fact they did (i.e.,



person questions). A 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the mean total number of false denials. No statistically significant main effect of valence,  $F(1, 83) = .02, p = .88, \eta^2_{\text{partial}} = .00$ , or a statistically significant interaction effect,  $F(2, 83) = .13, p = .87, \eta^2_{\text{partial}} = .00$ , emerged. As expected, a statistically significant main effect for condition was obtained,  $F(2, 83) = 12.37, p < .001, \eta^2_{\text{partial}} = .23$ . Participants in the Internal Denial group were more likely to falsely deny they had talked to the experimenter about a certain detail ( $M = .70, SD = .08$ ) relative to the other groups (External Denial:  $M = .17, SD = .08$ ; Control group:  $M = .21, SD = .08$ ; see also Figure 1).

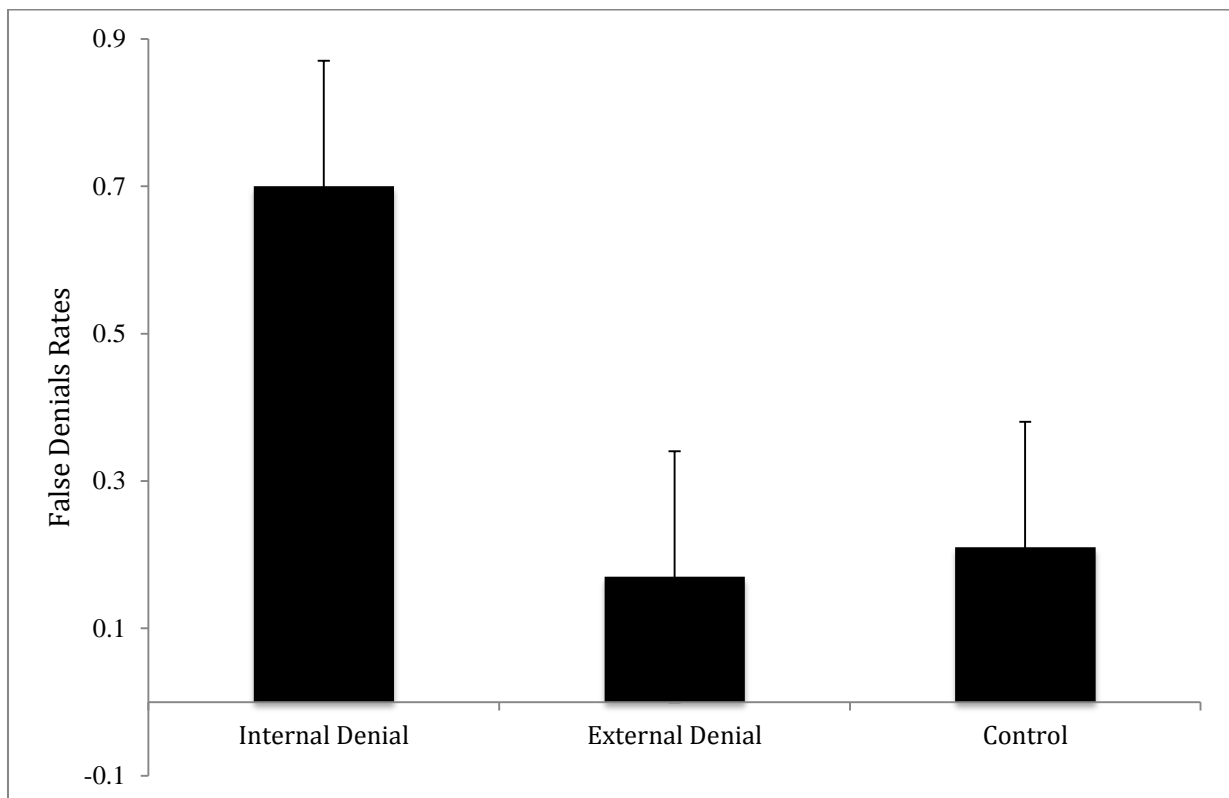


Figure 1. False denials rates on person question per condition (error bars represent 95% confidence intervals).

False denials pertaining to picture questions (i.e., claiming they did not see the specific detail when asked during session 2, but did provide the correct answers during session 1) were measured by a 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA. No statistically significant main effect of valence, condition or a statistically significant interaction was present (all  $ps > .05$ ).

## Memory

An additional interest of the current study was to see if the procedure might have led to nonbelieved memories. Ratings as nonbelieved memories were applied when memory scores were at least two scale points higher than the belief ratings.

During Session 2 participants could have developed nonbelieved memories. A 3 (Condition: Internal denial, External denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the ratings of nonbelieved memories during Session 2. At first glance, participants in the External Denial condition seemed to have developed more nonbelieved memories ( $M = .15$ ,  $SD = .04$ ) compared to the other groups (Internal denial:  $M = .05$ ,  $SD = .04$ ; Control:  $M = .05$ ,  $SD = .04$ ). However, a main effect of condition was absent,  $F(2, 83) = 1.71$ ,  $p = .18$ ,  $\eta^2_{\text{partial}} = .04$ . No main effect of valence,  $F(1, 83) = .56$ ,  $p = .45$ ,  $\eta^2_{\text{partial}} = .01$ , and no interaction effect emerged,  $F(2, 83) = .78$ ,  $p = .46$ ,  $\eta^2_{\text{partial}} = .02$ .

An exploratory analysis pertained to whether participants might report they had talked about a certain detail when in fact they did not talk about it with the experimenter (i.e., false memory). A 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the number of false memories for person questions during Session 2. At first glance, results indicate more false memories for person questions for negative valence ( $M = .03$ ,  $SD = .02$ ) than neutral valence ( $M = .01$ ,  $SD = .01$ ). However, no main effect of valence, condition or interaction effect emerged (all  $ps > .05$ ). A 3 (Condition: Internal Denial, External Denial, Control)  $\times$  2 (Valence: Negative vs. Neutral) repeated measures ANOVA was conducted on the number of false memories on picture questions (i.e., a false memory for a picture emerged if a participant reported they had seen a detail when in fact they could not have seen it). No main effect of valence,  $F(1, 83) = .08$ ,  $p = .78$ ,  $\eta^2_{\text{partial}} = .00$ , or an interaction effect,  $F(2, 83) = .69$ ,  $p = .50$ ,  $\eta^2_{\text{partial}} = .02$  was obtained. However, a main effect of condition did emerge,  $F(2, 83) = 3.90$ ,  $p = .02$ ,  $\eta^2_{\text{partial}} = .09$ . Results showed that participants in the Internal Denial condition ( $M = .43$ ,  $SD = .07$ ) and External Denial condition ( $M = .31$ ,  $SD = .07$ ) developed more false memories than the control group ( $M = .16$ ,  $SD = .07$ ).

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## DISCUSSION

The primary aim of the current study was to examine the memorial consequences of false denials for neutral and negative material. The main results can be catalogued as follows. During baseline testing, no difference between neutral and negative pictures was observed on the number of correct answers. However, belief and memory ratings were higher for neutral questions than for negative questions across all conditions. Thus, participants were more certain and remembered neutral details more vividly than negative details during Session 1. These findings did not emerge on Session 2.

The most important finding concerns the finding about the memorial consequences of false denials. Overall, participants in the Internal Denial condition made more incorrect answers than participants in the External Denial or in the control group. The analysis showed that falsely denying that certain details had occurred impacted correct memory performance. The results indicate that participants in the Internal Denial group, and only for person questions, were more likely to falsely deny they had talked to the experimenter about a certain detail. This finding is in line with the results of Vieira and Lane (2013) and Otgaar and colleagues (2014a). This effect could be explained by the source-monitoring framework (Johnson, Hashtroudi, & Lindsay, 1993). According to the SMF, repetition of details should increase source accuracy and therefore memory should be enhanced. However, when using repeating responses such as false denials, the detail is not repeated. False denials could require less cognitive operations. Participants who repeatedly had to falsely deny during the interview, have declined memory for the conversation about the specific detail. As a result, participants were less likely to remember what they talked about during Session 1 (see also Vieira & Lane, 2013).

The fact that the previous results did not emerge for the External Denial group could be the consequence of the fact that these participants were able to respond with 'I do not know'. A fixed number of questions were selected for the experimenter to deny. So, if a participant's answer was correct or incorrect, the experimenter could deny the answer. However, due to the fact the participants could say that they did not know, the experimenter was unable to deny certain questions. As a result, for some participants in the External Denial group the experimenter could respond to only four questions, whilst falsely deny only one question for other participants.

For criminal investigations, the goal is to obtain complete and accurate account of eyewitness accounts. However, using ‘don’t know’ responses can put this at risk (Scoboria & Fisico, 2013). In a recent study by Scoboria and Fisico (2013) the influence of instructions to encourage or discourage ‘don’t know’ responses was examined. Participants watched a video and were randomly assigned to a ‘don’t know’ encouraged, ‘don’t know’ discouraged or control group. Results indicated that the use of ‘don’t know’ responses leads to avoiding questions that would otherwise be answered incorrectly. Although encouraging ‘don’t know’ responses could be harmful (e.g., the output is lower), this does not affect accuracy. Based on the latter finding, Scoboria and Fisico (2013) advise interviewers to encourage use of ‘don’t know’ responses, because they lead to more accurate reports.

It is possible that for the current study, the false denial effect only appeared when the participants themselves falsely denied the question, and not if someone else falsely denied the question for them. That is, it might be the case that when actively falsely denying questions yourself, one probably uses more memory processes (e.g., cognitive inhibition). On top of that, though the External Denial instruction was similar to the instructions used in the omission studies, there was no objective evidence available for the participants (see e.g., Otgaar et al. 2010). That is, participants in the External Denial condition were not presented with objective evidence that might persuade them that their answer was incorrect.

A subsidiary aim of the present experiment was to examine whether the procedure might lead to the production of nonbelieved memories. The reasoning behind this was that previous studies indicate that social feedback enhances the development of nonbelieved memories (see e.g., Otgaar et al., 2013b; Scoboria et al., 2015). Participants in the External Denial condition received such social feedback. The External Denial condition did show more nonbelieved memories, but the results indicate that this finding is not statistically supported.

Another memorial consequence was the production of false memories. At first glance, results suggest that the production of false memories for person questions were more likely to appear for negative questions. However, there was no statistical difference. The production of false memories for picture questions were more likely to occur in participants in the Internal Denial and External Denial condition than in the control group. False denials might have a paradoxical effect on reporting incorrect claims of having seen the pictures at a later point in time. These findings resemble the findings of Vieira and Lane (2013), which they attribute to fluency effects in memory.

From a practical perspective, the findings are of importance for victims who do not disclose their victimization. Victims sometimes falsely deny the traumatic event, but the

current results suggest that falsely denying is not a good strategy. When a victim of child sexual abuse is interviewed about the event, the child could falsely deny having been abused because of multiple reasons (e.g., shame, loyalty to the perpetrator, fear; Leander et al., 2007). However, when the child is interviewed for a second time, the child might not recall what has been discussed during the first interview. As a result, answers can be inconsistent during subsequent interviews. Such inconsistencies are seen as an indicator for low credibility of such statements (Smeets et al., 2004). Though the current experiment was not based on traumatic experiences, it does indicate that false denials lead to a decline of memory performance. Hence, victims of traumatic incidents are advised to talk about the event than falsely denying the event.

To summarize, the current experiment has shown that false denials lead to worse memory performance. Participants were most likely to falsely deny that they discussed a certain detail with the experimenter when they were instructed to deny the specific detail a day before. This experiment used a similar procedure as the study of Otgaar et al. (2014a), but with different materials. However, the current study did replicate the findings of Otgaar and colleagues (2014a) with picture stimuli. The results join the findings of Vieira and Lane (2013) and Otgaar et al., (2014a) in suggesting that falsely denying affects memory in a consequential manner. However, underlying causes of false denials and possible other memorial effects are still unknown and thus more research is needed to understand the precursors and its consequences for memory. This would lead to a more understanding of cognitive processes underlying false denials.

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