Interrogation techniques and memory distrust

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Extensive research has shown that certain interrogation techniques may lead to false
confessions. Gudjonsson and MacKeith (1982) argued that the ‘memory distrust
syndrome’ could underlie some of these false confessions. The present study examined
the relation between memory distrust, false confessions, and several interrogation
techniques, by accusing innocent undergraduate students (n = 50) of exam fraud. To this
end, five interrogation techniques were used, namely providing false technical evidence,
providing false eyewitness evidence, minimising, maximising, and suggesting memory
problems. Suggesting memory problems was found to have largest impact on memory
distrust. Furthermore, it appeared that people were most willing to confess when false
technical evidence was provided. Although it was found that, in all interrogation
techniques, memory distrust scores correlated highly with false confession scores, they
did not have a uniform effect. Several explanations for the findings, and the implications
of these findings, are discussed.

Keywords: memory distrust; interrogation techniques; false confessions

Introduction

Police interrogations often consist of a variety of interrogation techniques. In worst-case
scenarios, suspects are exposed to suggestive questions, false evidence, and several other
ploy. A well-known procedure in the interrogation literature is the Reid technique (Inbau,
Reid, Buckley, & Jayne, 2001). This technique consists of nine steps, which all aim at
obtaining a confession of the suspect. The main objection to this technique is the high level
of pressure that suspects are exposed to, sometimes giving rise to false confessions
(Gudjonsson, 2001). To protect the interrogated individual, the Reid technique is
prohibited in several European countries (Vrij, 1998). However, some of these techniques,
and many others that can also be harmful to the suspect, are still found in the interrogation
room (Pearse & Gudjonsson, 1999).

In some of these techniques, false evidence is presented to the suspect (Leo, 1996). This
may vary from footage from non-existent cameras, false testimonies of eyewitnesses, to
non-existent fingerprints found at the crime scene. Although prohibited in several
countries, using false evidence is quite powerful in evoking false confessions. Other
techniques basically consist of active persuasion. For example, interrogators may
communicate absolute certainty that a suspect is guilty (Henkel & Coffman, 2004). In
this way, suspects come to believe that denying their involvement in the crime is pointless
and tend to confess. Another example is maximisation, in which the consequences of the
crime are exaggerated by the interrogator (Hartwig, Granhag, & Vrij, 2005; Kassin & McNall, 1991). This often results in strong feelings of guilt in suspects. Minimisation, on the other hand, intends to reduce the responsibility of the suspect. As a result, suspects may trivialise the crime and will more easily confess to the crime. Another way of manipulating suspects is undermining their confidence in their memories (Henkel & Coffman, 2004). Of course, the techniques mentioned above are just a minority of all the interrogation techniques that are used by the police.

Extensive research has shown that false confessions resulting from questionable interrogations are a common phenomenon (e.g. Kassin & Gudjonsson, 2004; Kassin & Kiechel, 1996). These false confessions can be divided into three different types: Voluntary false confessions, coerced-compliant false confessions, and coerced-internalised false confessions (Kassin & Wrightsman, 1985). Voluntary false confessions occur without any external pressure from the police and the motives behind them have to do with, for example, the suspect's desire for notoriety. Coerced-compliant and coerced-internalised false confessions, on the other hand, result from interrogative pressure. In cases of coerced-compliant false confessions, suspects remain convinced of their innocence, despite their confessions. Their confessions can best be seen as an attempt to escape from the interrogation situation or to avoid being locked up in police custody. In cases of coerced-internalised false confessions, individuals come to believe that they have committed the crime. They hold on to their confession even though they lack crime-related knowledge (Gudjonsson, 2003).

Gudjonsson and MacKeith (1982) argue that the 'memory distrust syndrome' could underlie this last category of false confessions. This syndrome can be defined as 'a condition where people develop profound distrust of their memory recollections, as a result of which they are particularly susceptible to relying on external cues and suggestions' (Gudjonsson, 2003, p. 196). The memory distrust syndrome is associated with two different conditions: (a) memory problems related to faulty encoding or consolidation during the criminal events (e.g. due to drug or alcohol use); (b) manipulation and undermining of the suspect's confidence in his memory during police interrogations (Gudjonsson, 2003). This article only deals with the latter condition, as the confidence of participants was also challenged by the interrogation techniques that were used in the present experiment.

Gudjonsson has described several cases of false confessions in which memory distrust seems to play a crucial role (Gudjonsson, 2003). Typically, suspects' statements in these cases develop from 'I have not committed this crime' to 'I do not know if I did this', and 'I could have done this', into 'I must have done it' (e.g. Gudjonsson, Kopelman, & MacKeith, 1999, p. 456). Case studies on memory distrust and false confessions can be taken to imply that memory distrust is a state-like characteristic, which is usually temporary and results from a disturbed thinking process (Gudjonsson, 2003).

In the present study, we wanted to explore to what extent memory confidence of healthy and intelligent young people can be undermined by interrogation techniques that are suspected of evoking false confessions. Therefore, we selected interrogation techniques that we expected to be most promising in creating memory distrust. Furthermore, we were interested in the relation between memory confidence and the tendency to confess. On the basis of cases described by Gudjonsson (e.g. Gudjonsson et al., 1999), it was expected that memory confidence and tendency to falsely confess would go hand in hand. To increase the ecological validity of the experiment, we chose a setting in which undergraduate students were accused of exam fraud.
Methods

Participants
Our sample consisted of 50 undergraduate psychology students (36 women) at Maastricht University. Their mean age was 20.04 years (SD = 1.41; range = 18–24). The participants were naive as to the real purpose of the experiment. They were told that they had to perform a series of cognitive tasks and complete several questionnaires. The session lasted for 1 hour. They were compensated with research credits for participating in our study. The research was approved by the standing ethical committee of the Faculty of Psychology of Maastricht University.

Procedure
The experiment took place in a small laboratory room which was designed to resemble an interrogation room. Upon arrival, participants signed informed consent. Following this, they had to organise two files of forensic cases that were deliberately mixed up. We told them that we were interested in how accurate and fast they would be able to do this. While participants were busy with this task, a paper with the upcoming exam of the current curriculum module was ‘accidentally’ left on their table and the experimenter left the room.

After approximately 5 minutes, the experimenter returned in distress, searched for the exam paper and when she found it, left the room again, but did not close the door entirely. In this way, the participant was able to hear a conversation in which the experimenter told another person, who was waiting in the corridor, that the participant may have looked at the exam paper. When returning to the room, the experimenter still appeared distressed.

After the participants had organised the files, they were given a piece of paper that stated: ‘From this moment on you are suspected of exam fraud. Imagine that you are seated in an interrogation room. You will be given descriptions of a couple of situations and I would like to ask you to put real effort in imagining those situations. You are suspected of looking at the exam of the current curriculum module. This is a violation according to the Rules and Regulations of the Act on Higher Education and Research. Try to imagine the given situations as clearly as possible, before answering the questions’.

After reading this instruction, the participants were confronted with five different interrogation situations. In between these interrogation situations, they completed several questionnaires that served as fillers. The interrogation situations and questionnaires were counterbalanced across participants.

A hidden camera was used to check whether the participants had looked at the exam paper. The footage showed that all participants were innocent of committing exam fraud.

Instruments
Interrogation techniques. We selected those techniques described by Henkel and Coffman (2004) that might bear relevance to memory distrust.

One of the interrogation descriptions included false technical evidence. It was stated that a camera had recorded the person skipping through the test: ‘a hidden camera in this room registered that you grabbed the exam and looked at it’. Another interrogation description involved a false eyewitness testimony, which read as followed: ‘Fred Dragstra, one of the assistants, just walked by and looked into the room. He saw you looking at the exam’. A third strategy aimed at minimising the offence: ‘I can imagine why you have looked at this exam. I probably would have done the same, if it was lying here on this table.'
Any person would have done that. And naturally, you want to have a good grade for your next exam. A fourth situation was based on the maximising strategy: ‘The problem is that you might share its content with other students. The course coordinator is therefore obliged to set a completely new exam. The course coordinator is, however, not able to do this, as his wife just gave birth to a baby with a heart defect’. A fifth interrogation description suggested memory problems and read as follows: ‘It happens quite regularly that healthy people cannot remember certain actions. This usually happens in the case of automatic actions. It is very plausible that this also applies to you and that you automatically, but unconsciously, looked at that exam, so that you cannot vividly remember it anymore’.

All five descriptions were followed by two questions: ‘to what extent would you distrust your memory right now?’ and ‘to what extent would you be willing to confess that you have inspected the exam paper?’. Participants had to answer these questions on 100mm Visual Analogue Scales (VASs; 0 = not at all, 100 = totally). As answering the first question may lead participants to be more inclined to answer the second question in the same way, we presented the questions on separate pages.

Subjective cognitive functioning. The Dutch version of the Squire Subjective Memory Questionnaire (SSMQ; Squire, Wetzel, & Slater, 1979; Cronbach’s α = 0.87) was used to measure confidence in memory functioning. This self-report questionnaire consists of 18 items, which are scored on a nine-point scale (−4 = ‘disastrous’; +4 = ‘perfect’). Sample items are ‘My ability to recall things when I really try is’ and ‘My ability to remember things that have happened more than a year ago is’. Scores were summed to obtain a total SSMQ score, with a negative score indicating a negative subjective evaluation of one’s own memory. This questionnaire was part of a survey which was performed several weeks before the experiment.

As another index of subjective memory functioning, we administered the Dutch version of the Cognitive Failures Questionnaire (CFQ; Broadbent, Cooper, Fitzgerald, & Parkes, 1982; Merckelbach, Muris, Nijman, & De Jong, 1996; Cronbach’s α = 0.84). The CFQ consists of 25 items, which measure self-report frequency of everyday failures in memory, perception/attention, and action. Illustrative items are ‘Do you forget where you put something like a newspaper or a book?’, ‘Do you fail to notice signposts on the road?’, and ‘Do you drop things?’. Participants are asked to indicate on a five-point scale how often they have experienced each cognitive failure during the past months (0 = ‘never’; 4 = ‘very often’). Scores were summed to obtain a total CFQ score, with higher scores indicating more cognitive failures.

Attribution style. The Attribution Style Questionnaire (ASQ; Peterson et al., 1982; Cronbach’s α = 0.69) was used to obtain a better impression of the participants’ attribution styles. That is, whether they tend to attribute negative and positive situations either externally or internally. The participants were given 10 situations. Sample items are ‘You run into an acquaintance who compliments you on your looks’ and ‘You give an important presentation for a group, but the audience reacts negatively’. These items were followed by several questions. We were particularly interested in the answer they gave to the question ‘Could this cause be attributed to you or to other people or situations?’’. The answers were rated on seven-point scales (1 = ‘totally attributed to other people and situations’, 7 = ‘totally attributed to myself’). Scores were summed with a lower score indicating an external attribution style, and a higher score reflecting an internal attribution style.

Other questionnaires. Apart from these questionnaires, we used several other questionnaires that will not be described here because they are theoretically irrelevant to the issue under
consideration. These filler questionnaires had two goals: First, to conceal the real purpose of the experiment, and second, to avoid cross-over effects of the interventions.

Results

Questionnaires

Table 1 shows mean scores and standard deviations of participants on the SSMQ, CFQ, and ASQ. In general, mean scores come close to what has been found in other studies relying on undergraduate samples (Merckelbach et al., 1996; Peterson et al., 1982; Van Bergen, Brands, Jelicic & Merckelbach, 2008). Table 1 also presents Pearson product–moment correlations between these measures. As can be seen, the correlational pattern is in the expected direction. That is, memory confidence (i.e. SSMQ) correlated significantly with cognitive failures (i.e. CFQ). Furthermore, internal attribution (i.e. ASQ) was related to lower levels of subjective confidence in one’s own memory functioning (i.e. SSMQ).

All relevant questionnaires were included as covariates in the analyses below. However, they were all non-significant and therefore excluded from the data analysis. Thus in what follows, results of analyses without these covariates are presented.

Interrogation techniques and memory distrust

A repeated measures analysis of variance (ANOVA) showed that there was a significant within-subjects difference among interrogation techniques: $F(4, 196) = 3.05, p < 0.05$ (see Table 2). Bonferroni corrected post hoc analyses showed that this effect was caused by the difference between the minimising manipulation and the memory problems suggestion manipulation on memory distrust scores ($p < 0.05$, $d = 0.42$). In other words, minimising evoked significantly lower levels of memory distrust than suggesting memory problems.

To ensure that the scores of participants were caused by the interrogation techniques and not by trait memory distrust, we also measured baseline memory distrust in a control group of undergraduates ($n = 35$) who had not participated in the experiment. In other words, they had to estimate the tendency to distrust their memory, imagining a situation in which they were accused of exam fraud while in fact they were innocent. The reason why we opted for undergraduates, who did not participate in the study, was to overcome potential crossover effects between baseline ratings and the other ratings of the five interrogation situations during the experiment. The baseline rating was also scored on a 100mm VAS. The average of the VAS scores was 7.97 (SD = 8.56). One sample $t$-tests showed that the tendency to distrust one’s memory in each interrogation situation differed significantly from baseline (all $ps < 0.05$).

Table 1. Means and standard deviations of participants’ scores on all relevant questionnaires, followed by Pearson product–moment correlation coefficients.

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
<th>SSMQ</th>
<th>CFQ</th>
<th>ASQ</th>
</tr>
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<tbody>
<tr>
<td>SSMQ</td>
<td>18.04 (15.75)</td>
<td>-</td>
<td>-0.39*</td>
<td>-0.32*</td>
</tr>
<tr>
<td>CFQ</td>
<td>64.35 (10.59)</td>
<td>-</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>ASQ</td>
<td>45.39 (6.94)</td>
<td>-</td>
<td></td>
<td></td>
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* $p < 0.05.$
Another way to approach the issue of how interrogation affects memory distrust is to look at the number of participants who rated their memory distrust > 50. This refers to the number of participants who scored higher than midpoint on the VAS, and therefore showed a noteworthy increase in memory distrust. Table 2 also shows these frequencies. As can be seen, in each interrogation situation at least some of the participants tended to distrust their memory (varying from four participants in the minimising manipulation to 14 participants in the memory problem suggestion manipulation).

**Interrogation techniques and confessions**

A repeated measures ANOVA performed on confessions ratings also yielded significant differences between interrogation techniques: $F(4,196) = 12.47, p < 0.05$. As can be seen in Table 3, the interrogation description that elicited the strongest tendency to falsely confess was the false technical evidence description. Bonferroni corrected *post hoc* analyses indicated that this technique differed significantly from all the others. That is, false technical evidence induced higher false confession ratings than false eyewitness testimony ($p < 0.05$, $d = 0.48$), minimising ($p < 0.05$, $d = 0.66$), maximising ($p < 0.05$, $d = 0.50$), and suggesting memory problems ($p < 0.05$, $d = 0.88$).

Again, baseline measurements were performed to assure the impact of the interrogation techniques. The average tendency to confess without any interrogation technique was 6.34 (SD = 8.30). One sample *t*-tests showed that tendency to confess in all interrogation techniques differed significantly from this baseline measurement (all *ps* < 0.05).

Table 3 also shows the frequency of confession ratings exceeding midpoint (> 50) per interrogation description. This refers to the number of participants who scored higher than midpoint on the VAS, and therefore showed a remarkable tendency to falsely confess. As can be seen in this table, in all interrogation descriptions quite a few participants had a

<table>
<thead>
<tr>
<th>Interrogation technique</th>
<th>M (SD)</th>
<th>Score &gt;50</th>
</tr>
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<tr>
<td>Technical evidence</td>
<td>51.16 (38.49)</td>
<td>28 (56%)</td>
</tr>
<tr>
<td>Eyewitness testimony</td>
<td>34.16 (31.99)</td>
<td>18 (36%)</td>
</tr>
<tr>
<td>Minimising</td>
<td>28.42 (30.04)</td>
<td>12 (24%)</td>
</tr>
<tr>
<td>Maximising</td>
<td>33.52 (31.26)</td>
<td>17 (34%)</td>
</tr>
<tr>
<td>Suggesting memory problems</td>
<td>22.48 (25.51)</td>
<td>7 (14%)</td>
</tr>
</tbody>
</table>
tendency to falsely confess. When exposed to false technical evidence, more than half of the people (56%) exceeded the midpoint.

**Memory distrust and false confessions**

Table 4 shows $r^2$ indices, which represent the amount of variability in false confessions that is explained by memory distrust for each interrogation situation. These indices were obtained by squaring the Pearson’s correlation coefficients between memory distrust and false confession tendency. In general, we found that memory distrust scores significantly correlated with false confession scores among all interrogation techniques ($r$s varied from 0.31 to 0.54), yet the amount of explained variance ($r^2$) varied from a low 10% to a high 29%.

**Discussion**

It is well documented that a confession is the strongest type of evidence and triers of fact tend to perceive it as ultimate proof of guilt (Kassin & Neumann, 1997; Vrij, 1998). Gudjonsson and MacKeith (1982) argued that people with memory distrust might be more prone to falsely confess. The results of this study show that memory distrust is not a static, trait-like phenomenon. Rather, under the influence of interrogation techniques, people may vary in their tendency to distrust their memory. We found that suggesting memory problems increases people’s tendency to distrust their memory. Presenting false evidence (i.e. camera footage), on the other hand, resulted in the strongest tendency to falsely confess. Thus, interrogation techniques do not have a uniform effect on memory distrust and false confessions. Indeed, the relationship between memory distrust and false confession tendencies is far from perfect.

Although confronting suspects with false evidence is prohibited in several countries outside the USA, it is not uncommon (Pearse & Gudjonsson, 1999). Even if false evidence is not explicitly mentioned during an interrogation, police officers may insinuate that evidence is available. Furthermore, little is known about the techniques which are used during off-the-record interviews (Vrij, 1998). In accordance with the work by Kassin and Wrightsman (1985), our results show that techniques capitalising on false evidence promote false confessions. People may start to believe that there might be incriminating evidence and therefore tend to confess (Vrij, 1998).

The type of memory distrust measured in this experiment can be seen as state memory distrust. Table 1 shows that the mean SSMQ score before any manipulation was above midpoint, that is, people did not generally distrust their memory. So they cannot be

![Table 4. $r^2$ coefficients between tendency to distrust memory and the tendency to falsely confess for each interrogation technique separately.](image-url)
classified as people with trait memory distrust. Only three individuals scored lower than midpoint on the SSMQ before the experiment. However, as can be seen in Table 2, the number of participants that started to distrust their memory after the manipulations was higher. This type of memory distrust is therefore equivalent to memory distrust described in Gudjonsson’s cases (Gudjonsson, 2003).

Our results indicate that suggesting memory problems results in the highest tendency to distrust one’s own memory. In a way, this was to be expected, as the content of the memory problem technique corresponds to the question that is asked later (i.e. whether people distrust their memory). The crux of the memory problem technique is that people are given an explanation as to why they have forgotten the violation. In a way, this technique can be conceptualised as a minimising technique. However, as can be seen in Table 2, the suggesting memory problems technique and the minimising technique used in our study differ significantly in the extent to which they affect memory distrust scores. Indeed, there is an important difference between these two strategies. In the suggesting memory problems description, people were told explicitly that they might have looked at the exam paper, due to a process that happens automatically. On the other hand, the minimising technique implied that a person should have been fully aware of the violation. Of course, memory distrust will be strongest for actions that are not monitored consciously and/or were not performed intentionally. The confidence-undermining power of suggesting memory problems is also illustrated in case studies on false confessions (Gudjonsson, 2003).

With respect to the relationship between memory distrust and false confessions, we can conclude that for each interrogation technique, these two concepts are positively, but far from perfectly, correlated in each interrogation technique (see Table 4). In other words, if distrust in your memory increases, you will be more likely to confess and vice versa, but there also seem to be other factors that play a role in false confessions. Also, no conclusions can be drawn about causal direction of the link between memory distrust and false confessions. On theoretical grounds, it would be most logical to assume that memory distrust results in false confessions (Gudjonsson, 2003; Gudjonsson et al., 1999), but this issue needs further study.

To investigate this causal issue, one could elicit memory distrust in one of two groups, and then subject both groups to a false confession paradigm (e.g. Kassin & Kiechel, 1996; Russano, Meissner, Narchet, & Kassin, 2005). If creating memory distrust resulted in a significant group difference, this would be strong evidence for memory distrust as an antecedent of false confessions.

A number of limitations of this study deserve comments. First, due to ethical constraints imposed by our ethical committee, this experiment was designed as a thought experiment. That is, instead of being accused directly, people had to imagine the situations. This imaginative character may have reduced the effects. Still, the results indicate that some interrogation techniques make healthy, intelligent students susceptible to distrusting their memory and to confess to violations that they have not committed. Also, we believe that the results may be generalised to real-life situations, as former studies have already shown that imagination may be strong enough to have behavioural consequences (Bernstein, Laney, Morris, & Loftus, 2005; Scoboria, Mazzoni, & Jarry, 2007). Moreover, Scoboria et al. (2007) state that suggestions about past events may have more persistent effects on behaviour than on self-reports. This confirms our expectation that the self-reported scores on the VASs are an underestimation of the effects in real-life interrogation settings.

A second limitation concerns the ecological validity of our experiment. As there was no real pressure exerted during our experiment, it was not representative of a real
interrogation setting. In addition, the descriptions of the scenarios were rather short. In other words, if we would have used more elaborated scenarios, this could have contributed to a more realistic interrogation setting, resulting in larger effects. On the other hand, in real-life interrogations, police officers often use manipulations consisting of short messages, which would justify the short descriptions used in our experiment.

Third, a within-subject design was used in this experiment. We chose for this design to increase ecological validity, as in police interrogations most of the time, more than one technique is used. However, in future studies, it might be interesting to use a between-subject design. An argument favouring this type of design is that we expect that it would evoke larger differences between the interrogation techniques, as people would probably not give answers that contradict each other, as happens in a within-subjects design. However, research has shown that, in real interrogations, suspects stick to their starting position most of the time (Baldwin, 1993).

Fourth, but related to the first limitation, the participants in this experiment were all undergraduate students. There is reason to believe that undergraduates will be less susceptible to distrust their memory, as they are intelligent people who have good memory in general, compared to the general population. Some groups of individuals, for example, people with attention deficit hyperactivity disorder (ADHD) have been found to be more susceptible to memory distrust as a result of the little confidence they have in their memory (Gudjonsson, Young, & Bramham, 2007). Furthermore, other studies have shown that undergraduates do not differ from prison inmates and people in the general community with regard to false confessions (Horselenberg, Smeets, & Zonnenberg, 2007). This indicates that our results found in undergraduate students can at least be seen as a realistic mirror of the effects in real-life interrogations, as they do not differ greatly from the general public. Therefore, we believe that the results obtained in this study can be generalised to the general public, however we expect that in a real-life setting in which more pressure is exerted on other groups of individuals (e.g. people with ADHD), the effect of suggesting memory problems or memory distrust would even be larger.

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References


