UNIVERSITY OF GOTHENBURG DEPARTMENT OF PSYCHOLOGY

The Effect of Guilt Presumptions on the Perception of Suspect Interrogations

Märta Sjölin Wanner

Master thesis 30hp PX2503 – Master's degree Spring semester 2020

Supervisor: Karl Ask

The Effect of Guilt Presumptions on the Perception of Suspect Interrogations

Märta Sjölin Wanner

The current study explores the effects of confirmation bias on the perception of suspect interrogations. Participants (N = 141) were assigned to read one of two versions of a suspected homicide case, before reading an interrogation transcript. Participants in the *suspect guilty* condition (n = 75) were at the outset led to believe in the suspect's guilt, while participants in the *alternative suspect* condition (n = 66) were introduced to the possibility of an alternative perpetrator. Participants presuming guilt perceived the interrogation as better-conducting and overlooking confrontational interrogation methods, and became less convinced of the suspect's guilt after having read the interrogation. The results indicate that receiving suspect statements obtained by information-gathering techniques can moderate the effects of confirmation bias.

Strong assumptions of a specific person's guilt during the initial stage of a criminal investigation can cause investigators to be affected by tunnel vision. In the legal system, tunnel vision is often used as a synonym to confirmation bias, which may cause investigators to lose objectivity, only searching for guilt-verifying evidence or ignoring substantial information of innocence (Findley & Scott, 2006). Confirmation bias can affect even the best, most educated, and most experienced police investigators' decisions and influence their interpretations of evidence, and can persist during the entire police investigation. Several studies within the field of legal psychology have explored the effects of confirmation bias, a potential hazard within criminal investigations since it may result in severe consequences such as an innocent suspect's false confession and wrongful imprisonment (Findley & Scott, 2006; Hartwig, Granhag, Strömwall & Vrij, 2005). However, research often focuses on either investigations or interrogations, even though interrogations are a vital part of the investigation. To my knowledge, these two fields have rarely been linked together and can almost be categorized as two sub-fields of research. The effects of confirmation bias on investigations and interrogations are an essential and relevant body of research, and the current study aims to explore the influence of confirmation bias on observers' perception of a suspect interrogation.

Confirmation Bias in the Legal System

Confirmation bias is a well-established concept within the field of psychology and often identified as a (mostly) unconscious cognitive process where people tend to interpret information in line with prior beliefs or an initial hypothesis (Nickerson, 1998). Even ambiguous information that does not give apparent support for one's opinion and expectations can be interpreted as substantial evidence (Snyder & Swann, 1978), while relevant information that indicates the opposite, may be ignored (Findley & Scott, 2006). Much research has tried to explain why confirmation bias occurs, and researchers have advanced different theoretical accounts. Some theories explain the phenomenon as a cognitive consequence of heuristic thinking (i.e., cognitive shortcuts to decisions based on experience and intuition) since it requires demanding cognitive capacity to consider several hypotheses at the same time (Evans, 2006). People use heuristic thinking more or less unconsciously every day, which often results

in quick and reasonably correct judgments without any severe consequences (Ask & Alison, 2010). Other theories suggest a social explanation that people prioritize the need to be right higher than the need to find the truth (Mercier, 2016). Prior beliefs and attitudes strengthen when people do not discuss and question arguments that contradict the initial belief (Mercier, 2016), and high motivation for defending behaviors and beliefs prevents the reduction of bias (Klaczynski & Narasimham, 1998).

Within the legal system, Findley and Scott (2006) argue that tunnel vision is the initial narrowed focus that expands into confirmation bias in order to filter in new information to support the initial hypothesis. Evidence that suggests that the initial hypothesis is incorrect will be ignored or highly undervalued. Findley and Scott (2006) also state that tunnel vision is a well-known phenomenon to legal actors and often used as a synonym of confirmation bias. In this thesis, I will use confirmation bias as a concept and synonym of tunnel vision since several aspects of a criminal investigation will be discussed.

Nickerson (1998) argues that the confirmation of a hypothesis is not equal to finding evidence for the hypothesis; in addition, one should try to falsify the hypothesis to explore all possible explanations. This means, in the context of a Swedish legal system, that the prosecutor has to investigate all reasonable scenarios in which the suspect is innocent before concluding that the charges are true beyond reasonable doubt (Malmgren, n.d.). The Swedish criminal code also states the need for "probable cause" to apprehend and deprive a suspect of their freedom. Therefore, the investigators may have to formulate an early hypothesis regarding who the suspect is and why. A study by O'Brien (2009) found that the construction of a list of other potential suspects was not enough to counteract confirmation bias, since participants who had been instructed to do so rated the same high level of blame as those who only constructed one early hypothesis. Participants who constructed several hypotheses for the suspect's innocence, however, decreased their level of suspicion towards the suspect. Hence, the hypotheses of innocence moderated the effects of confirmation bias (O'Brien, 2009). Therefore, hypotheses of innocence should be formulated and updated along with the investigations' progress to explore all information available (O'Brien, 2009). However, this is a time- and energyconsuming process, resources that police investigators often lack (Ask & Alison, 2010).

Research on confirmation bias has often focused on the initial stage of a police investigation, but confirmation bias can occur during the whole legal process. Hence, confirmation bias may cause errors and biased decisions of all legal actors (Findley & Scott, 2006). For example, the prosecutor may only be provided with a summary of the investigation and the main reasons for apprehending a suspect. Therefore, they run a high risk of being biased to believe in the suspect's guilt. Defense lawyers may not question the police's analysis of evidence or the conduction of the investigation and therefore fail to defend the suspect in a suitable manner (Findley & Scott, 2006). In the United States (i.e., in an adversarial jurisdiction), 90-95% of all criminal cases resolve with plea-bargaining. Instead of risking a higher sentence in court, the suspect confesses guilty of the crime, convinced it is their only option (Slobogin, 2014). The fact that the suspect confessed, regardless of whether (s)he is guilty or innocent, investigators, prosecutors, and defense lawyers may become further biased to believe in the suspect's guilt (Findley & Scott, 2006). During a trial, the judge, lay-judges, and jury members (depending on the jurisdiction) may also be biased to believe in the suspect's guilt, since prosecution requires reasonable grounds in the first place (Findley & Scott, 2006).

Confirmation Bias in Police Investigations

Evaluation of Evidence. Technical evidence, such as the suspect's DNA or fingerprints, are considered to be reliable and objective pieces of evidence of guilt (Kassin, Dror, &

Kukucka, 2013). However, the technique of comparing fingerprints has no recommendations for how many points should match in order to be able to say that one fingerprint belongs to a specific person, hence it is a subjective judgment. For example, the match of five points or 20 points between two fingerprints can be acceptable, depending on the analyst and jurisdiction. Also, fingerprints can change due to humidity, temperature, or scars, and thereby leave further room for biased interpretation and errors (Kassin et al., 2013). Confirmation bias during interpretation and analysis of technical evidence (i.e., forensic confirmation bias) may cause investigators to fail to see that other hypotheses could explain the presence of the suspect's DNA (Kassin et al., 2013). According to Ask, Rebelius and Granhag (2008), evidence such as DNA and fingerprints has low 'elasticity', meaning a low risk of biased interpretation, while a witness statement, on the contrary, has high 'elasticity' and therefore a high risk of biased interpretation and errors.

Information from witnesses and victims constitutes the majority of all evidence in a police investigation. Ceci & Bruck (1995) states that a sign of confirmation bias affecting the interrogator is when (s)he reveals information and details that are not known or mentioned by the one who gets interrogated, which can occur with or without the interrogator's consciousness. The interrogator may also express questions and assertions in a way that indicates true information, which may alter the memory of the event, and lead to the inclusion of wrongful information in the statement (Ceci & Bruck, 1995). High 'elasticity' of several pieces of evidence in a criminal case may require more questions and formulation of several hypotheses to reduce the risk of biased interpretation of information. Ceci and Bruck (1995) also highlight the importance of keeping in mind that prior knowledge of the case may not be accurate or complete.

Suspect Interrogation. Interrogations of suspects is a vital part of police investigations. There are several manuals available to instruct police officers in interrogating uncooperative suspects, and the most established manual is the Reid-technique (Hartwig, Luke & Skerker, in press; Kassin & Kiechel, 1996). It can be defined as a confrontational confession-aimed method that includes manipulation, leading questions, and minimization/maximization (Kassin & McNall, 1991). Many people have difficulty understanding the psychological stress of being interrogated and the severe consequences of using confrontational interrogation methods, compared with the obvious hazard of physical torture (Hartwig, Luke & Skerker, in press). People often think they never would confess guilty of a crime they did not commit. However, if the interrogator keeps interrupting the statement and ignores every explanation, a confession may be a fact, true or false (Kassin & Kiechel, 1996). However, interrogations do not necessarily contain confrontational methods. During the last decades, researchers have developed several interrogation techniques-referred to as information-gathering methods, investigative interrogations, or interviews-that do not include deception or manipulation of the suspect. The aim of these techniques is to elicit as much information as possible from both innocent and guilty suspects (Brimbal & Jones, 2017) and extract the memory of the original event (Memon, Meissner & Fraser, 2010).

One information-gathering method is the strategic use of evidence (SUE) technique, which aims to elicit information by strategically using previously collected information and evidence (Granhag, Strömwall, Willén & Hartwig, 2013). For example, the interrogator could ask evidence-related questions such as the suspect's travel habits, before presenting the actual evidence of the suspect's fingerprints on a suitcase (Granhag et al., 2013). One criticism of using the SUE-technique has been its focus on differentiating liars from truth-tellers rather than confirming the suspect as the perpetrator (DePaulo & Pfeifer, 1986). There are difficulties in separating lies from truths. Research shows few (and week) evidence of cues to deception (Luke, 2019), and Vrij (2008) means that a lying suspect does not equal a guilty suspect. There may be other reasons for concealing information or telling an outright lie (e.g., protecting

someone else, shame for another action). The Cognitive Interview (CI) is a technique that mainly consists of open-ended questions (e.g., tell me everything you can remember about the event), continuously urge to 'tell more', and values the power of the interviewer's silence (Memon et al., 2010). However, methods such as CI often requires cooperation from the interrogated.

Depending on the interrogated role (i.e., victim, witness, or suspect) and the jurisdiction, different terms of interrogation are used when referring to the interrogation target. For example, police officers in England use interviews (i.e., recommendations of conducting CI) regardless of whether the target is a victim, a witness, or a suspect, according to the PEACE-model¹. The United States interrogates suspects and interviews victims and witnesses (Hartwig, Luke & Skerker, in press). Sweden, on the other hand, interrogates regardless of target, and therefore, the current research will use the term interrogation regardless of whether the interrogated is a witness, a victim, or a suspect (unless stated otherwise).

Confirmation Bias in Interrogations. The best way to avoid confirmation bias in interrogation is for the interrogator to have as little information about the case as possible. However, in real criminal investigations, interrogators rarely conduct interrogations without reading prior case-related material (Aarons, Powell & Browne, 2004; White, Leichtman & Ceci, 1997). Without background information, it is almost impossible to prepare the interrogation, a vital part of conducting a 'good' interrogation. However, previous knowledge may hinder the pursuit of details (Aarons et al., 2004). According to Powell, Wright, and Clark (2010), confirmation bias can also be observed when knowledge of previous similar case functions as a guideline in the new case and the investigator has expectations of required evidence and how to get proof for a valid charge. Both background information and experience in similar criminal cases can result in a formulation of an early hypothesis and guilt assumptions about the suspect (Powell et al., 2010). Lidén, Gäns, and Juslin (2018) found that participants' (i.e., psychology students) guilt assumptions towards the suspect and guilt-driven questions decreased if the police, rather than the prosecutor, decided to apprehend the suspect. Knowledge of apprehension may also increase the risk of using confrontational interrogation methods (Lidén et al., 2018) and influence the perceived credibility towards the suspect (Aarons et al., 2004; Lidén et al., 2018).

In a study by Powell, Hughes Scholes, and Sharman (2012), guilt-biased interrogators who performed well in investigative interrogation methods (i.e., according to the number of open-ended questions), initiated the interrogation with open-ended questions but gradually turned to ask an increasing number of leading questions. However, some of the interrogators were able to maintain the use of open-ended questions, showing that education and experience moderated the effects of confirmation bias. Powell et al. (2010) mean that guilt assumptions, along with experience, also can cause expectations on what information to receive during the interrogation of the suspect. As shown by Kassin, Goldstein, and Savitsky (2003), these expectations may cause behavioral changes of the interrogator and are more prominent when interrogating an innocent suspect. These changes (i.e., behavioral confirmation bias), includes a passive and uninterested behavioral manner, use of confrontational confession-aimed techniques, pressure, and guilt-driven questions (Kassin et al., 2003). Unexpected and critical details revealed during the interrogation may also be viewed with more skepticism and cause the questioning of the suspect's credibility (Aarons et al., 2004), which may lead to an unwillingness of the suspect to cooperate with the police (Bradford, Murphy, & Jackson, 2014). Vallano and Schreiber Compo (2015) state that the interrogator can reduce these effects by

¹ The original PACE (Police and Criminal Evidence Act) was implemented in 1984 with restrictions in the treatment of a suspect and mandatory of videotaping the interrogations. It evolved into PEACE-model (Planning, Establish contact, Account, Closure, Evaluation) in 1992 (for more information, see Scott, Tudor-Owen, Pedretti & Bull, 2017).

taking the time to build rapport with the suspect (i.e., establish trust, mutual respect, and diminish inequality of power/authority). Building rapport with the suspect also enhances their future cooperation and trust towards the police and the whole justice system (Vallano et al., 2015).

The process of implementing investigative interrogation and interviewing methods such as the CI and SUE within the legal system is far from uncomplicated. Unfortunately, many instances within the legal system experience time-pressure, limited resources, heavy workloads, and demands on high clearance rates, especially when a criminal investigation is under the spotlight of high media coverage (Ask & Alison, 2010). These factors not only decrease the chance of preparing the interrogation and build rapport but also increase the risk of confirmation bias (Ask & Granhag, 2007). The risk of heuristic thinking and biased decision making also increases, which may result in confrontational interrogation methods (Hill, Memon, & McGeorge, 2008; Kassin et al., 2003). Thereby the risk of innocent suspects' false confession and wrongfully imprisonment increases (Ask & Alison, 2010).

The Present Study

Based on previous research on the consequences of confirmation bias such as the creation of a guilt-confirming investigation (Rassin et al., 2010), misinterpretation of evidence (Ask, Rebelius, & Granhag, 2008) and the use of confrontational interrogation methods with leading and guilt-driven questions (Powell et al., 2012), the current study aimed to explore the role of confirmation bias in the perception of interrogations. Participants were instructed to read a summary of a police investigation of a potential murder case, including observations made from the crime scene, and a transcript from the interrogation of the prime suspect. Participants were randomly assigned to read one of the two vignettes. Participants in the *suspect guilty* condition were made aware of a potential motive of jealousy, and were thus biased to believe in the prime suspect's guilt. Participants in the *alternative suspect* condition were introduced to the possibility of another suspect, in order to invite examination of other possible suspects and to reduce bias.

It was expected that early guilt-assumptions during police investigation would affect the interpretation of the interrogation with the suspect. Therefore, it was hypothesized that participants in the suspect guilty condition would interpret the interrogation as more incriminating than participants in the alternative suspect condition (H1).

Furthermore, it was expected that participants in the suspect guilty condition would rate the interrogation as better conducted (e.g., less manipulative and less guilt presumptive) than participants in the alternative suspect condition (H2). This prediction assumes that confirmation bias obscures the presence of confrontational interrogation methods, while an open-minded investigator is vigilant to such problems.

As a consequence of confirmation bias, it was hypothesized that participants in the suspect guilty condition would ascribe more guilt towards the prime suspect after having read the interrogation of the suspect than would participants in the alternative suspect condition (H3).

Moreover, because confirmation bias tends to increase guilt-assumptions as more information becomes available (Aarons et al., 2004), it was predicted that participants in the suspect guilty condition would display a stronger increase in ratings of the suspect's guilt after (vs. before) having read the suspect interrogation than would participants in the alternative suspect condition (H4).

The present study was preregistered on the OSF platform (<u>https://osf.io/pbtdr</u>) before survey distribution. The preregistration describes materials and intended procedure for data

collection, as well as the requirements of conducting the intended data analyses. Hence, it declares that the present study purpose, hypotheses, and conduction were not constructed post data collection. The preregistration also included the results of an a priori power analysis, resulting in a requirement of a total sample size of 120 participants as a minimum, given a power level of .80, $\alpha = .05$ and an expected effect size of d = .52 (i.e., a medium effect according to Cohen's guidelines; Cohen, 1988). The effect size d = .52 was retrieved from a previous study by Ask and Granhag (2005) since the same stimulus material was used in the present study.

Method

Participants

A total of 141 participants completed the survey, 52 of whom were women and 85 men with a range in age from 20 to 67 years (M = 37.76, SD = 11.08), and with four participants who failed to answer the demographic questions. Two thirds (65.9%) of the participants were employees within the Swedish police (n = 93), with a range in years of employment from zero to 40 years (M = 12.80, SD = 10.13). Participants were also retirees from the police department (n = 1), students within the Swedish Police Academy (n = 34), employees within other occupations (n = 8), university students (n = 1), and participants without description (n = 4). Participants who were or had been employees within the police (n = 94) stated various employment titles: 46.8% were assistants (i.e., the lowest rank within the Swedish police; n =44), 39.4% were police inspectors (often received after 6-10 years of employment; n = 37), 5.3% were investigators (n = 5), and 8.5% stated other or no titles (e.g., chief inspector, forensic technician, lawyer; n = 8). Regardless occupation of all participants, 79 participants (77.5%) had previous experience of both criminal investigations (range in experience from 0.5 to 25 years; M = 7.81, SD = 6.79) and interrogations (range in experience from 1 to 35 years; M =9.45, SD = 6.86). One participant had experience in criminal investigations, but not in interrogations, and eight participants had experience in interrogations but not in criminal investigations. None of the students registered experience in either criminal investigations or interrogations.

Participants were randomly assigned to one of two experimental conditions; the *suspect* guilty condition (n = 75) and the *alternative suspect* condition (n = 66).

Materials and Procedures

Distribution. A survey was created through Qualtrics and distributed to Swedish police districts public e-mail addresses with an inquiry to forward the survey to their employees within the police. The survey was also distributed to three Swedish Police Academies, one police chief and one police (both acquainted to the author), and to the administrator of a Facebook group where only police employees are allowed. One police district, one police academy, both the police acquaintances and the Facebook administrator agreed to forward the survey to their employees, colleagues, students, and Facebook members. The survey was also distributed, with a separate survey link, to members of RAPS, employees within rescue services, ambulance, police, hospital, correctional facilities, customs and border control (Åsheden, 2015). Participants were informed about the study purpose and participant rights (i.e., anonymity, right

to discontinue at any point), and by following the link to the survey they agreed to participate voluntarily and indicated consent to the survey conditions.

Case Description. Participants were instructed to read a summary of a police investigation in a potential homicide case (see Appendix 1). They were asked to imagine they were one of the investigators working on the case and were informed that some information (e.g., victim and prime suspect names) had been changed or excluded from the survey due to confidentiality. The inclusion of this information aimed to increase participants' motivation for sincere answers. The first part of the investigation, based on stimulus materials from studies by Ask and Granhag (2005, 2007), presented the victim as a female psychologist who was found dead in her apartment. Another woman, acquainted with the victim, was also found in the apartment and hence became the prime suspect. Participants were randomly assigned to read one of two versions of the vignette; participants in the suspect guilty condition (n = 75) were informed about a potential motive of jealousy, as the prime suspect had expressed suspicion that there might be a sexual relationship between the victim and the prime suspect's partner. Participants in the *alternative suspect* condition (n = 66) were introduced to another potential suspect, an unidentified man who had previously called and threatened the victim's life several times. Participants in both conditions were then presented with a 17-item list containing observations made during the investigation so far (e.g., a blood-stained knife was found next to the victim's body, the prime suspect's fingerprints were found on the knife, the prime suspect had signs of violence in her face and stated that she had tried to stop an attack made by an unknown male intruder).

Pre-Interrogation Guilt Rating. Participants were asked to indicate their initial perception of the prime suspect's guilt by rating three items. Each item was rated on a 7-point scale: (a) "How likely is it that the prime suspect is guilty of killing the victim?" (1 = not at all likely, 7 = extremely likely), (b) "How strong are your suspicions against the prime suspect at this point?" (1 = extremely weak, 7 = extremely strong) and (c) "According to you, how strong support for the prime suspect's guilt is there at this point?" (1 = very weak support, 7 = very strong support). The three items of pre-interrogation guilt ratings were averaged into an index after having confirmed high internal reliability (Cronbach's $\alpha = .888$)

Interrogation Transcript. Participants in both conditions were then instructed to read a transcript from an interrogation of the prime suspect (see Appendix 2). The interrogation was held constant for all participants and was created by the author to resemble an interrogation that mainly contained components from an information-gathering method (e.g., open-ended questions and no interruption of the suspects' statement). Several transcripts from interrogations of real criminal cases were read and listened to in order to create an interrogation that would be perceived as authentic and made in a real criminal case. The interrogation also included components from confrontational methods, such as leading questions, suggestions, and minimization of the criminal act. The suspect's statement was created to enable interpretation of both incriminating, exonerating or neutral information, regardless condition. During the interrogation, the prime suspect gave information about a man who attacked the victim with a knife. The suspect stated that she tried to stop the attack and got injured at that moment. She also stated that the man fled after stabbing the victim, but she could not give any description of the unknown attacker.

Post-Interrogation Guilt Ratings. Participants were asked to indicate their perception of the prime suspect's guilt by once again filling out the three guilt perception ratings (see Pre-Interrogation Guilt Ratings). The three items of post-interrogation guilt ratings were averaged into an index after having confirmed high internal reliability (Cronbach's $\alpha = .916$)

Interrogation Method Rating. Participants then rated their perception of the interrogation on 7-point scales (1 = not at all, 7 = to a very high degree) for 17 items (see Appendix 1). First, participants rated their perception of the suspect's guilt (e.g., "To what

extent do you think the interrogation provides support for the suspect's guilt?"). Second, participants rated their perception of the interrogation method (e.g., "To what extent do you think the interrogation was manipulative?", "To what extent do you think the interrogator asked open-ended questions?"). Third, they rated their perception of the suspect statement (e.g., "To what extent do you think the information given by the suspect is credible?"). Fourth, participants were also asked to rate their perception of the interrogation as authentic, real, and fictional (e.g., "To what extent do you think the interrogation was authentic?").

Demographic Information. Before ending the survey, participants answered questions about gender, age, occupation/employment title, and if they had, and how many years of experience in criminal investigations and interrogations. They were thanked for their participation and informed that the case and interrogation were fictive and produced for the current study. If they wanted to take part of the study results, they could follow a link to an additional survey to fill in their e-mail addresses in order to secure their anonymity.

Data Analyses

All data analyses were conducted according to the pre-registered plan, since there was no violation of the assumptions for any of the analyses. All data analyses used a significance level of $\alpha = .05$.

Results

Manipulation Check

An independent *t*-test was conducted as a manipulation check with the index of participants' pre-guilt perception as the dependent variable and the experimental condition (suspect guilty *vs.* alternative suspect) as the independent variable. The suspect guilty condition rated a higher guilt towards the prime suspect after having read the summary of the crime investigation (M = 4.88, SD = 1.00), than the alternative suspect condition (M = 4.38, SD = 1.03). Since the difference achieved statistical significance, t(139) = 2.90, p = .004, d = .489, the experimental manipulation of initial guilt perception was considered successful.

Guilt and Incrimination Ratings

To test the hypothesis that participants in the suspect guilty condition would interpret the interrogation as more incriminating than participants in the alternative suspect condition (H1), an independent sample *t*-test was conducted, using participants' ratings of the extent to which the interrogation indicated a guilty suspect as the dependent variable. Participants in the suspect guilty condition (M = 3.47, SD = 1.30) rated the interrogation as slightly less incriminating than participants in the alternative suspect condition (M = 3.61, SD = 1.50), but the difference was opposite of the predicted direction and did not achieve a significant difference, t(139) = -0.59, p = .555, d = .099. Thus, Hypothesis 1 was not supported.

Participants' pre- and post-interrogation guilt ratings are presented in Table 1. To test whether participants in the suspect guilty condition (vs. alternative suspect) would ascribe the suspect more guilt after having read the interrogation (H3), an independent sample *t*-test, with the index of post-interrogation guilt ratings as the dependent variable, was conducted. As

expected, the suspect guilty condition rated the prime suspect's guilt slightly higher than the alternative suspect condition. However, the difference did not achieve statistical significance t(139) = 0.81, p = .417, d = .137 and Hypothesis 3 was therefore not supported.

Table 1

Means (and standard deviation) of pre- and post-interrogation guilt ratings

	Time	
Condition	Pre-interrogation	Post-interrogation
Suspect guilty	4.88 (1.00)	4.60 (1.05)
Alternative suspect	4.38 (1.03)	4.45 (1.06)

To test Hypothesis 4, predicting that participants in the suspect guilty (vs. alternative suspect) condition would display a stronger increase in guilt ratings after having read the interrogation, a 2 (condition: suspect guilty vs. alternative suspect) × 2 (time: pre-interrogation vs. post-interrogation) mixed ANOVA, with time as repeated measure was conducted. As predicted, there was a significant interaction effect between time and condition, F(1, 140) = 9.71, p = .002, $\eta_p^2 = .065$, which was expected to provide support for the hypothesis. However, the interaction was opposite of the predicted direction, since participants in the suspect guilty condition decreased (rather than increased) their perception of the suspect's guilt from pre-interrogation to post-interrogation guilt ratings for the suspect guilty condition achieved statistical significance, F(1, 140) = 12.13, p = .001, $\eta_p^2 = .014$. There was no significant main effect for either condition, F(1, 140) = 3.75, p = .055, $\eta_p^2 = .026$, or for time, F(1, 140) = 3.14, p = .079, $\eta_p^2 = .022$.

Interrogation Perception Ratings

In order to obtain valid results of the analysis regarding participants' perception of the interrogation, five items were recoded so that high (vs. low) ratings of all 13 items could be interpreted as a better conducted interrogation. The five recoded items are indicated in Table 2. A principal component analysis (PCA) was conducted to check the relatedness and correlation between the 13 rated items of the interrogation of the prime suspect. A Kaiser-Meyer-Olkin (KMO) measure indicated adequate sampling of reliable components, KMO = .824. Moreover, since all inter-item correlation values were below .9, indicating no risk of multicollinearity, it was deemed acceptable to conduct the PCA (Field, 2013). Three components (C1, C2 and C3) were extracted according to Keiser's criterion of eigenvalues > 1, and explained 66.3% of the total variance. However, the current study data failed to meet the criteria for appropriate use of Keiser's criterion (i.e., communality values > .7 or N > 250). Also, the scree plot revealed two or three points of inflexion, hence an acceptance to extract two or three components. Therefore, a comparison of Cronbach's alphas for two ($\alpha_{C1 + C3} = .861$, $\alpha_{C2} = .860$) versus three ($\alpha_{C1} = .861$, $\alpha_{C2} = .623$, $\alpha_{C3} = .860$) components resulted in two components for further analyses. An additional PCA, demanding a retraction of two fixed components, were therefore conducted in

order to retrieve the correct component loadings, eigenvalues and percentage of variables explained (Table 2). Component 1 contained items related to the perception of interrogation methods and Component 2 contained items related to the perception of statement credibility.

To test whether participants in the suspect guilty condition rated the interrogation as better conducted (e.g., less manipulative, less leading questions) than participants in the alternative suspect condition (H2), a MANOVA was conducted, using the components derived from PCA as dependent variables. Using Pillai's test, there was a significant effect of condition, indicating that participants in the suspect guilty condition interpreted the interrogation significantly better conducted than participants in the alternative suspect condition, V = 0.068, F(2, 138) = 5.02, p = .008, $\eta_p^2 = .068$. Univariate analysis showed that the suspect guilty condition perceived the interrogation method to include fewer components from confrontational interrogation methods (M = 3.47, SD = 0.94) than the alternative suspect condition (M = 3.96, SD = 1.04), reaching a significant difference F(1, 140) = 8.41, p = .004, $\eta_p^2 = .057$. The suspect guilty condition also perceived the suspect's statement to be more credible (M = 3.83, SD = 1.02) than the alternative suspect condition (M = 4.21, SD = 1.13), reaching a significant difference F(1, 140) = 4.51, p = .035, $\eta_p^2 = .031$. The results of the MANOVA thus shows support for Hypothesis 2.

Table 2.

Summary of PCA.

	Loadings	
Item	Component	Component
	1	2
Leading questions	.82	
Confrontational	.77	
Manipulative	.77	
Presumed guilt	.76	
Suggestive	.73	
Interrupted the suspects statement	.69	
Maximization	.58	
Minimization	.54	
Open-ended questions ^a	.51	
Encourage the suspect to freely narrate ^a	.48	
Statements credibility ^a		.83
Truthful statement ^a		.82
Sincere statement ^a		.74
Eigenvalues	5.15	2.01

Percentage of variance explained39.6115.49Note.Extraction method: Principal Component Analysis. Rotation method: Oblimin with
Kaiser Normalization.aReverse coded items

Discussion

The aim of the current study was to examine whether confirmation bias early in a criminal investigation would affect the interpretation of an interrogation. In line with prior

research, it was hypothesized that confirmation bias due to guilt presumption would intensify as more information is received (Aarons et al., 2004), hence an incriminating interpretation of the interrogation and a stronger belief in the suspect's guilt. It was also hypothesized that participants affected by confirmation bias would interpret the interrogation as better conducted, and fail to notice components of confrontational interrogation methods. Confirmation bias was also expected to affect the perceived credibility of the suspect's statement, such that guiltpresumptive participants would believe the suspect is lying to a greater extent than participants not presuming guilt.

The results for the hypotheses regarding presumptions of the suspect's guilt showed that participants in the suspect guilty condition decreased their assumptions of guilt, while a slight increase for the alternative suspect condition, an opposite direction than hypothesized. This result can be due to the fact that the interrogation had been created to resemble an informationgathering method, which Brimbal and Jones (2017) argue is a method aimed to increase the amount of received information. This increase in information may have raised hypotheses of innocence, a factor that O'Brien (2009) means decreases the perception of the suspect's guilt. The result of decreased guilt-presumptions of participants in the suspect guilty condition may also depend on their perception of the suspect's statement. Obelander et al. (2016) means that a long and plausible statement, rich in details and without discrepancy are some components used in assessment-tools of statement credibility. If these components were perceived as present in the statement, participants may have considered the statement of the guilt-denying suspect as credible, regardless of the assigned condition. It was also hypothesized that the suspect guilty (vs. alternative suspect) condition would assess the interrogation as incriminating and consider it as evidence for the suspect's guilt. However, regardless condition, the results showed that the interrogation was not perceived as evidence of guilt, which also can be due to the perceived credibility (Obelander et al., 2016) and the creation of an information-gathering interrogation that promotes innocence-hypotheses (O'Brien, 2009).

Regarding the hypothesis about participants' interpretation of the interrogation, participants in the suspect guilty (vs. alternative suspect) condition rated the interrogation as better conducted. This result indicates that ambiguous interrogation components may be overlooked under the influence of confirmation bias (Findley & Scott, 2006). If so, participants in the suspect guilty condition may also have failed to observe ambiguous components in the suspect's statement. Aarons et al. (2004) states that the effects of confirmation bias can result in a focus on the initial presumption of guilt and ignore whether the interrogated is telling the truth or not, which can explain the results that participants in the suspect guilty condition rated higher belief of the suspect telling the truth, the opposite of hypothesized. The results of higher credibility by participants in the suspect guilty (vs. alternative suspect) condition may also be the result of a perceived consistency of the statement content between the initial statement made at the crime scene and the interrogation transcript. Consistency is often believed to characterize a true statement, especially if the memory has been traumatic (McNally, 2005); however, lies can be rehearsed (McNally, 2005). An inconsistency is often valued by investigators as evidence of deception (Deeb et al., 2018), but inconsistency does not necessarily have to negatively affect the credibility (Granhag, Landström, & Nordin, 2017). If main components of an event have been mentioned previously and some details are left out (or added), this inconsistency may indicate retrieval of an authentic memory, hence a credible statement (Granhag, Landström, & Nordin, 2017).

In contrast, participants in the alternative suspect condition were introduced to another potential suspect in the case vignette in order to reduce bias and encourage investigation of the prime suspect's innocence, resulting in an open-minded and critical exploration of new information. The study results showed that participants in the alternative suspect (vs. suspect guilty) condition were more critical of the interrogation method and rated a lower credibility

towards the suspects statement, which can be explained with the findings of Brimbal and Jones (2017). They found that the identification of confrontational interrogation techniques along with the exposure of a lie, both influenced the perception of guilt-supporting evidence and increased guilt presumptions towards the suspect. If participants in the alternative suspect condition, by their open-minded exploration of information, have noticed the presence of negative interrogation components and also identified a lie in the suspect's statement, they may perceive the evidence given in the case description (e.g., the suspects fingerprints on the murder weapon) as more incriminating, increasing guilt-presumptions and assuming the suspect is lying. Participants in the alternative suspect condition may also have been aware that confrontational interrogation methods, such as leading questions, could produce less reliable answers from the suspect, and therefore they perceived the suspect statement as less credible.

Before the current study data collection, an a priori power analysis was computed to test the required sample size, resulting in a minimum of 120 participants given a power level of .80, $\alpha = .05$ and an expected effect size of d = .52. Given that the manipulation check was considered successful and the total sample size of 141 participants, the power level could also be deemed acceptable. However, there is a risk of not detecting actual effects if potential effects were smaller than the expected, which may decrease power and affecting the interpretation of the current study results.

Limitations and Future Research

In order to create an interrogation of the suspect that would be perceived as authentic, several transcripts from interrogations of real criminal cases was read and listened to, before creating the stimulus material. Even though this background research was made, the creation of the interrogation such as formulations, type of questions asked and the statement content, may have been influenced by my subjective perception of incriminating versus exonerating information. The same text can be read with different emphases, giving different meaning to the same word and what seems like incriminating information to one person may be perceived as exonerating (or neutral) to another. Even though the current study was a first step toward examining the influence of confirmation bias on the interpretation of interrogations, it is important to highlight that in real criminal investigations, the initial interpretation of a statement occurs immediately when it is heard. This means that the statement is not read and cannot be reflected on before the interrogator makes an (un)conscious initial judgement. Therefore, future research should aim to use and compare live, videotaped and transcribed versions of interrogations. Landström, Ask and Sommar (2015) found that a live presentation of a victim's statement increases its perceived credibility compared to a video presentation. Whether the results of Landström et al. (2015) also apply to the perception of suspect interrogations remains to be explored in future research.

The study used repeated measures of the perceived guilt in order to examine whether the interrogation increased (vs. decreased) guilt perceptions. The survey should have included more questions regarding participants' perception of the interrogation as evidence for the suspect's guilt and whether the interrogation was perceived as incriminating or not, in order to obtain a more reliable measure of the interrogations impact on guilt perceptions. Considering previous research on how bias results in pressuring interrogations to get confessions (Hartwig, Granhag, Strömwall & Vrij, 2005; Kassin et al., 2003), one can argue that guilt presumptions also will have an impact on the interpretation of the statements content. Because of the current study results, one can argue that confirmation bias would increase the risk of misinterpretation and neglect of information provided by the interrogated, especially when interrogators use leading questions and/or manipulative methods.

Conclusions

Several studies have show the high risk of confirmation bias in both criminal investigations and interrogations, resulting in the use of confrontational interrogation methods which are associated with false confessions (Hartwig et al., 2005). For the interrogator to make progress and develop a consistent skill in information-gathering methods, Magnusson, Ernberg, and Landström (2017) highlight the necessity of immediate feedback. The current findings indicate that such feedback should come from an objective and independent analyst without knowledge of the case, in order to detect the use of ambiguous interrogation methods. To my knowledge, this is the first study to examine the impact of confirmation bias on the interpretation of interrogations. The current study shows that confirmation bias can intensify the effects of initial guilt presumptions and cause a failure to detect ambiguous components in the interrogation method (e.g., guilt-driven questions, manipulation). However, the effect of confirmation bias, and the negative consequences of guilt presumptions, can be moderated if investigators are presented with an interrogation that mainly consists of information gathering interrogation methods. Criminal investigators often also serve as the interrogators, and, therefore, moderating the effects of bias and unconscious errors in judgements is crucial in order for investigators to conduct appropriate investigations and ethical interrogations. The current study had a sample that consisted of 90.1% of participants (93 participants were employees within the Swedish police, and 34 participants were students within the Swedish police academy) that either are or going to work with criminal investigations and/or interrogations. Therefore, the current study results highlight that education and practice in information-gathering interrogation methods, as well as the ambition to maintain an investigative and open-minded attitude, should not be undervalued.

References

- Aarons, N. M., Powell, M. B., & Browne, J. (2004). Police perceptions of interviews involving children with intellectual disabilities: A qualitative inquiry. *Policing and Society*, 14, 269–278. doi: 10.1080/1043946042000241848
- Ask, K., & Granhag, P. A. (2005). Motivational sources of confirmation bias in criminal investigations: The need for cognitive closure. *Journal of Investigative Psychology and Offender Profiling*, 2, 43–63. doi: 10.1002/jip.19
- Ask, K., & Granhag, P. A. (2007). Motivational bias in criminal investigators' judgments of witness reliability. *Journal of Applied Social Psychology*, 37, 561–591.
- Ask, K., & Alison, L. (2010). Investigator's decisionmaking. In P.A. Granhag (Ed.). Forensic Psychology in Context – Nordic and international approaches (pp. 35-55). Cullompton, UK: Willan.
- Ask, K., Rebelius, A., & Granhag, P.A. (2008). The 'elasticity' of criminal evidence: A moderator of investigator bias. *Applied Cognitive Psychology*, 22, 1245-1259. doi: 10.1002/acp.1432
- Bradford, B., Murphy, K., & Jackson, J. (2014). Officers as mirrors: Policing, procedural justice and the (re)production of social identity. *British Journal of Criminology*, *54*, 527-550. doi: 10.1093/bjc/azu021
- Brimbal, L., & Jones, A. M. (2017). Perceptions of suspect statements: a comparison of exposed lies and confessions [online]. *Psychology, Crime & Law.* doi: 10.1080/1068316X.2017.1390111

- Ceci, S. J., & Bruck, M. (1995). The role of interviewer bias. In S. J. Ceci, & M. Bruck, *Jeopardy in the courtroom: A scientific analysis of children's testimony* (pp. 87–108). Washington, DC: American Psychological Association.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Erlbaum.
- Deeb, H., Vrij, A., Hope, L., Mann, S., Granhag, P. A., & Strömwall, L. A. (2018). Police officers' perceptions of statement inconsistency. *Criminal Justice and Behaviour*, 45(5), 644-665. doi: 10.1177/0093854818758808
- DePaulo, B. M., & Pfeifer, R. L. (1986). On-the-job experience and skill at detecting deception. *Journal of Applied Social Psychology*, 16, 249–267.
- Evans, J. S. (2006). The heuristic-analytic theory of reasoning: Extension and evaluation. *Psychonomic Bulletin & Review*, 13, 378–395.
- Findley, K. A., & Scott, M. S. (2006). The multiple dimensions of tunnel vision in criminal cases. *Wisconsin Law Review, 291*, 291-397.
- Granhag, P. A., Landström, S., & Nordin, A. (2017). Värdering av muntliga utsagor. Ett vetenskapligt baserat beslutstöd för migrationsärenden [Evaluation of verbal statements: A scientifically based decision support for migration issues]. Gothenburg: University of Gothenburg
- Granhag, P. A., Strömwall, L. A., Willén, R. M., & Hartwig, M. (2013). Eliciting cues to deception by tactical disclosure of evidence: The first test of the Evidence Framing Matrix. *Legal and Criminological Science*, 18, 341-355. doi: 10.1111/j.2044-8333.2012.02047.x
- Hartwig, M., Granhag, P. A., Strömwall, L. A., & Vrij, A. (2005). Detecting deception via strategic disclosure of evidence. *Law and Human Behavior*, *29(4)*, 469–484. doi: 10.1007/s10979-005-5521-x
- Hartwig, M., Luke, T.J., & Skerker, M. (in press). Ethical perspectives on interrogation: An analysis of contemporary technique. In J. Jacobs & J. Jackson (Eds.), *Handbook of Criminal Justice Ethics*.
- Hill, C., Memon, A., & McGeorge, P. (2008). The role of confirmation bias in suspect interviews: A systematic evaluation. *Legal and Criminological Psychology*, 13, 357– 371. doi: 10.1348/135532507X238682
- Kassin, S. M., Dror, I. E., & Kukucka, J. (2013). The forensic confirmation bias: Problems, perspectives, and proposed solutions. *Journal of Applied Research in Memory and Cognition*, *2*, 42-52.
- Kassin, S. M., & Kiechel, K. L. (1996). The social psychology of false confessions: Compliance, internalization, and confabulation. *Psychological Science*, 7, 125–128
- Kassin, S. M., & McNall, K. (1991) Police Interrogations and Confessions Communicating Promises and Threats by Pragmatic Implication. *Law and Human Behavior*, 15 (3), 233-251. doi: 10.1007/BF01061711
- Kassin, S. M., Goldstein, C. C., & Savitsky, K. (2003). Behavioural confirmation in the interrogation room: On the dangers of presuming guilt. *Law and Human Behaviour, 27 (2)*,187–203.
- Klaczynski, P. A., & Narasimham, G. (1998). Development of Scientific Reasoning Biases: Cognitive Versus Ego-protective Explanations. *Developmental Psychology*, 34, 175-187.
- Landström, S., Ask, K., & Sommar, C. (2015). The emotional male victim: Effects of presentation mode on judged credibility. *Scandinavian Journal of Psychology*, 56, 99-104.
- Lidén, M., Gäns, M., & Juslin, P. (2018). The presumption of guilt in suspect interrogations: Apprehension as trigger of confirmation bias and debiasing techniques. *Law and Human Behaviour*. doi: 0147-7307/18/\$12.00

- Luke, T. J. (2019). Lessons from Pinocchio: Cues to deception may be highly exaggerated. Perspectives on Psychological Science, 14, 646-671.
- Magnusson, M., Ernberg, E., & Landström, S. (2017). Asking children to talk about abuse: Can research help improve police interviewer skills? *The Inquisitive Mind, 3,* online publication. Retrieved May 8, 2020 from <u>https://www.in-mind.org/article/asking-children-to-talk-about-abuse-can-research-help-improve-police-interviewer-skills</u>

Malmgren, S. (n.d.). Bevisbörda [website]. Retrieved May 8, 2020 from http://www.lagen.nu

- McNally, R. J. (2005). Debunking myths about trauma and memory. *Canadian Journal of Psychiatry*, 50(13), 817-822.
- Memon, A., Meissner, C. A., & Fraser, J. (2010). The Cognitive Interview: A meta-analytic review and study space analysis of the past 25 years. *Psychology, Public Policy, and Law, 16*, 340-372. doi: 10.1037/a0020518
- Mercier, H. (2016). The argumentative theory: Predictions and empirical evidence. *Trends in Cognitive Sciences*, 20, 689–700. http://dx.doi.org/10.1016/j.tics.2016.07.001
- Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review* of General Psychology, 2, 175–220.
- Obelander, V. A., Naefgen, C., Koppehele-Gossel, J., Quinten, L., Banse, R., & Schmidt, A. F. (2016). Validity of content-based techniques to distinguish true and fabricated statements: A meta-analysis. *Law and Human Behavior*, 40, 220-257.
- O'Brien, B. (2009). Prime suspect: An examination of factors that aggravate and counteract confirmation bias in criminal investigations. *Psychology, Public Policy, and Law, 15(4),* 315-334. doi: 10.1037/a0017881
- Powell, M. B., Hughes Scholes, C. H., & Sharman, S. J. (2012). Skill in interviewing reduces confirmation bias. *Journal of Investigative Psychology and Offender Profiling*, 9, 126– 134.
- Powell, M. B., Wright, R., & Clark, S. (2010). Improving the competency of police officers in conducting investigative interviews with children. *Police Practice and Research*, 11, 211–226.
- Rassin, E., Eerland, A., & Kuijpers, I. (2010). Let's find the evidence: An analogue study of confirmation bias in criminal investigations. *Journal of Investigative Psychology and Offender Profiling*, 7, 231-246. DOI: 10.1002/jip.126
- Scott, A. J., Tudor-Owen, J., Pedretti, P., & Bull, R. (2015). How intuitive is PEACE? Newly recruited police officers' plans, interviews and self-evaluations. *Psychiatry, Psychology and Law, 22,* 355-367.
- Slobogin, C. (2014). Lessons from Inquistiorialism. Southern Calefornian Law Review, 87, 699-732.
- Snyder, M., & Swann, W. B. (1978). Hypothesis-testing processes in social interaction. *Journal* of Personality and Social Psychology, 36, 1202–1212.
- Vallano, J.P., & Schreiber Compo, N. (2015). Rapport-building with cooperative witnesses and criminal suspects: A theoretical and empirical review. *Psychology, Public Policy, & Law, 21,* 85-99
- Vrij, A. (2008). *Detecting Lies and Deceit: Pitfalls and Oppertunities* (2nd ed.). New York: John Wiley & Sons
- White, T. L., Leichtman, M. D., & Ceci, S. J. (1997). The good, the bad, and the ugly: Accuracy, inaccuracy, and elaboration in preschoolers' reports about a past event. *Applied Cognitive Psychology*, 11, 37–54.
- Åsheden, S. (2015, 09, 18). *R.A.P.S mer än en talgrupp i Rakel* [Article]. Retrieved April 8, 2020 from https://www.s112.se/2015/09/18/r-a-p-s-mer-an-en-talgrupp-i-rakel/

Appendix 1

Case Description - Swedish

Misstänkt skyldig. En kvinna hittas död i sin lägenhet. En annan kvinna, Eva, påträffas också i lägenheten och är därför misstänkt. Offret är en psykolog som bor och bedriver sin verksamhet i lägenheten. Offret och Eva är bekanta med varandra eftersom Evas man är en regelbunden klient till offret. Enligt offrets assistent hade Eva uttryckt stark misstanke om en sexuell relation mellan offret och Evas man och var väldigt svartsjuk. Offrets assistent uppger även att Eva tidigare besökt offret och då uppträtt upprört och aggressivt. Följande observationer har gjorts än så länge i utredningen:

Alternativ misstänkt. En kvinna hittas död i sin lägenhet. En annan kvinna, Eva, påträffas också i lägenheten och är därför misstänkt. Offret är en psykolog som bor och bedriver sin verksamhet i lägenheten. Offret och Eva är bekanta. Offret har sedan en tid tillbaka fått flera telefonsamtal från en anonym man som hotat att döda henne. Offret hade polisanmält telefonsamtalen och hoten var alltså känt av polisen. Offret hade berättat för polisen att hon trodde att det var en klient eller tidigare klient som ringt telefonsamtalen. Offrets assistent hade vittnat om offrets oro och rädsla över hoten. Följande observationer har gjorts än så länge i utredningen:

Observationer vid brottsplatsen:

- 1. Brottet utfördes vid lunchtid
- 2. Polisen larmades till lägenheten av en granne som hört bråk i lägenheten ovan honom.
- 3. Två polismän anlände till platsen inom några minuter.
- 4. Polisen knackar på dörren flera gånger utan svar och finner dörren låst.
- 5. Efter några minuter öppnar den misstänkte, Eva, dörren.
- 6. Offrets assistent återvände då från lunchen.
- 7. Den misstänkte hade skärsår i handen, tecken på våld mot ansiktet och blodfläckar på kläderna.
- 8. Eva visade symptom på chock.
- 9. Polisen fann offret på golvet i lägenheten.
- 10. Offret hade förlorat mycket blod och visade inga livstecken.
- 11. Polisen fann en blodig kniv bredvid offrets kropp.

Information från platsförhör med misstänkt:

- 12. Eva förnekar all skuld.
- 13. Eva uppger följande händelseförlopp:
 - a. En okänd man attackerade offret med kniven.
 - b. Hon skadades i ett misslyckat försök att ta kniven från mannen och stoppa attacken.
 - c. Efter att ha knivhuggit offret, flydde mannen ut ur lägenheten.
 - d. Eva kunde inte uppge andra signalement av mannen, än mörkklädd och hade handskar.

Observationer från övrig utredning:

- 14. Blodet på kniven tillhörde både Eva och offret.
- 15. Blodfläckarna på Evas kläder tillhörde både Eva och offret.
- 16. Endast offret och Evas fingeravtryck återfanns på kniven.

17. Grannen som larmat polisen uppger att han sett en mörkklädd man springa nedför gatan vid tiden för brottet. Grannen uppger att mannen inte hade handskar på sig.

Den misstänkte, Eva, grips för misstanke om mord, men förnekar all skuld.

English Translation of the Case Description

Suspect Guilty Version. A woman is found dead in her apartment. A second woman, Eva, is encountered in the apartment, hence a suspect in the case. The victim is a psychiatrist who lived and had her office in the apartment. Eva is acquainted to the victim since Evas husband is the victim's client with regular visits. According to the victim's assistant, Eva had expressed strong suspicion about a sexual relationship between the victim and Eva's husband, and was deeply jealous. The victim's assistant also states that Eva had visit the victim previously, and behaved upsetting and aggressive. The following observations have been made thus far in the investigation:

Alternative suspect version. A woman is found dead in an apartment. A second woman, Eva, is encountered in the apartment, hence a suspect in the case. The victim is a psychiatrist who lived and had her office in the apartment, and was acquainted to Eva. The victim had recently received several phone calls from an anonymous man who threatened to kill her. These phone calls were reported to the police by the victim and therefore known to the police from before. The victim had told the police that she thought the man was a patient or a former patient of hers. The victim's assistant had testified about the victim's concern and fear of the threats. The following observations have been made thus far in the investigation:

Observations at the crime scene:

- 1) The crime was committed at lunchtime.
- 2) A neighbour had heard people fighting in the apartment above him and decided to call the police.
- 3) Two policemen arrived to the apartment within a few minutes.
- 4) The police were pounding on the door several times without any answer, and found the door locked.
- 5) The door opens after a few minutes by the suspect, Eva.
- 6) The victim's assistant then returns from lunch.
- 7) The suspect had cuts in her hands, signs of beating in her face and bloodstains on her clothes.
- 8) Eva showed symptoms of shock.
- 9) The police found the victim's body in the apartment.
- 10) The victim had lost a lot of blood and showed no sign of life.
- 11) The police found a bloody knife next to the victims' body.

Information from the suspect given at the crime scene:

12) The suspect, Eva, denies all guilt.

- 13) Eva gives the following statement:
 - a. An unknown, male intruder attacked the victim with the knife.

- b. She tried to stop the offence, trying to take the knife from the perpetrator, and got hurt at that same moment.
- c. After stabbing the victim, he fled through the apartment door.
- d. Eva claims that the perpetrator had dark clothes and wore gloves, but no other description.

Additional observations in the investigation:

- 14) The blood on the knife belonged to both Eva and the victim.
- 15) The blood on the victim's clothes belonged to both Eva and the victim.
- 16) The fingerprints found on the knife belonged to the suspect and the victim.
- 17) The neighbour who called the police, states that he had seen a man running down the street outside the victim's house by the time of the offence. He said that the man did not wear gloves.

The police apprehend the suspect, Eva, for suspicion of murder. Eva denies all guilt.

Interrogation Method Rating - Swedish

I vilken grad anser du att förhöret talar för att den misstänkte är skyldig till att ha dödat offret?

I vilken grad anser du att förhöret...

- ... var manipulativt (dvs. förhörsledaren försökte medvetet styra den misstänkte i en viss riktning)?
- ... var suggestivt (dvs. förhörsledaren antydde saker utan saklig grund)?
- ... förminskade brottet (dvs. förhörsledaren tonade ned brottshandlingen och dess konsekvenser)?
- ... förstorade brottet (dvs. förhörsledaren överdrev brottshandlingen och dess konsekvenser)?
- ... var konfrontativt (dvs. förhörsledaren utsatte den misstänkte för direkta anklagelser)?

I vilken grad anser du att förhörsledaren...

- ... gav den misstänkte möjligheten att berätta fritt?
- ... avbröt den misstänktes berättande?
- ... utgick från att den misstänkte var skyldig?

I vilken grad anser du att förhörsledaren ställde frågor som var...

- ... ledande?
- ... öppna?

I vilken grad upplever du att informationen som den misstänkte delger i förhöret är...

- ... uppriktig?
- ... tillförlitlig?
- ... sanningsenlig?

English Translation of the Interrogation Method Rating

To what extent do you think the interrogation provides support for the suspects' guilt?

To what extent do you think the interrogation...

- ... was manipulative?
- ... was suggestive?
- ... minimized the crime?
- ... maximized the crime?
- ... was confrontational?

To what extent do you think the interrogator...

- ... gave the suspect the opportunity to freely narrate?
- ... interrupted the suspect statement?
- ... assumed the suspect's guilt?

To what extent do you think the interrogator asked questions that were...

- ... leading?
- ... open-ended?

To what extent do you think the information given by the suspect is...

- ... sincere?
- ... credible?
- ... truthful?

Appendix 2.

Suspect Interrogation – Swedish

Förhör F = Förhörsledare, M = Misstänkt

F: Du har vid tidigare förhör berättat händelseförloppet i samband med att X dog, men jag skulle gärna vilja att vi går igenom detta igen. Kan du berätta från början, med dina ord, vad det var som hände?

M: Ja. Jag kom ju till lägenheten för att prata med X men det va en man där. Dom bråkade och jag såg att han höll i en kniv när han närmade sig X så jag förstod att han skulle hugga henne. Jag sprang dit för att stoppa honom, men han slog mig så jag föll. Och, ja, jag såg hur han högg henne och sen så sprang han därifrån. Det är så hemskt.

F: Kan du berätta mer om hur du försökte stoppa honom.

M: Ja alltså jag skrek att han skulle sluta men det gjorde han inte. Jag skulle ta kniven men skar mig när jag skulle ta den och så slog han mig i ansiktet så jag ramlade ner på golvet. Det va då han högg henne.

F: Okej, så du försökte ta kniven?

M: Ja, det gick så snabbt. Han drog sig loss så jag tappade taget.

F: Vad hände sen?

M: Han högg henne, flera gånger och sprang. Jag vet inte. Sen kom ni.

F: Är det något annat som du vill berätta? Något annat du kommit på?

M: Nej, jag tror inte det.

F: Okej. Vi har ju gått igenom den tekniska bevisningen mot dig innan. Till exempel fanns dina fingeravtryck på kniven, du hade X blod på dina kläder...

M: Ja jag försökte ju hjälpa henne men det gick så snabbt. Jag kunde inte göra nått.

F: Okej. När polisen anlände till platsen så var dörren låst. Kan du berätta nått om det?

M: Ja jag låste den när han sprungit ut från lägenheten ifall han skulle komma tillbaka.

F: Var dörren låst när du kom till lägenheten för att prata med X?

M: Nej, den va öppen.

F: Okej, hur såg mannen ut, hur var han klädd?

M: Nej, jag minns inte riktigt. Mörka kläder. Och handskar tror jag. Jag såg inte hans ansikte.

F: Okej. Jag skulle vilja prata mer om din och X relation till varandra. Hur kände ni varandra?

M: Ja, jag kände henne inte, men jag har vart på en session med henne förut, som en del i min mans behandling. Ja han är ju hennes patient. De har träffats varje vecka i... ja snart 5 månader och jag... Han har inte mått så bra det sista, tystare, mer inbunden, det va därför jag åkte dit. Jag ville prata om hans behandling. Vi pratade mest om hur våran relation va, hur jag skulle kunna hjälpa honom hemma och så. På sessionen alltså.

F: Va det något som gjorde dig upprörd under samtalet?

M: Nej, varför skulle de det? Jag va ledsen, det har inte varit så lätt.

F: Pratade din man någon gång om hans möten med X?

M: Nej.

F: Dom träffades ju ganska ofta, X och din man. Misstänkte du någon gång att deras relation var mer än terapeutisk?

M: Nej. Att dom skulle haft en affär eller vadå? Nej. Är det nån som sagt det?

F: Jag mena bara att det inte hade varit konstigt om du blev svartsjuk. Han pratade med X men inte med dig. Vem som helst hade kunnat reagera starkt på det.

M: Nu förstår jag inte...

F: Har du träffat X fler gånger?

M: Nej.

F: Okej. Jag skulle vilja höra mer om vad du gjorde innan du kom till X lägenhet. Berätta från början, du vaknar... vad gör du sen?

Förhöret fortsätter...

English Translation of the Suspect Interrogation

I = Interrogator, S = Suspect

I: In previous interrogation, you've told us what happened at the time of X death, but I want you to give me your full statement again. Can you tell me everything you remember, from the beginning, with your own words, what happened?

S: Well, I went to the apartment to talk to X, but a man was there. They argued and I saw he had a knife when he moved towards X so I understood that he would stab her. I ran over there to stop him, but he knocked me down. And well, I saw him stabbing her and then he fled. It's so terrible.

I: Can you tell me more about when you tried to stop him?

S: Well, I screamed at him, that he should stop, but he didn't. When I was about to take the knife, I cut myself and then he hit me in my face and so I fell. That's when he stabbed her.

I: Okay, so you tried to take the knife?

S: Yes, it all happened very fast. He pulled away so I lost my grip.

I: What happens then?

S: He stabbed her, multiple times and ran. I don't know. Then the police showed up.

I: Anything else you want to tell us? Anything you remember?

S: No, I don't think so.

I: Okay. We have talked about the evidence against you during previous interrogation. For example, we found your fingerprints on the knife, X blood was on your clothes...

S: Yes, I was trying to help her but it all happened very fast. I couldn't help her.

I: Okay. When the police arrived to the apartment, the door was locked. Can you tell me anything about that?

S: Well, I locked it after he fled the apartment in case he would return.

I: Was the door locked when you arrived to the apartment?

S: No, it was open.

I: Okay, can you describe the man, how he was dressed?

S: No, I don't remember. Dark clothes. And gloves, I think. I didn't see his face.

I: Okay. I want to talk more about your relationship to X. How did you know each other?

S: I didn't, but I had been in a therapy session with her, as a part of my husbands' treatment. He has been her client for about... 5 months I think and I... He hasn't been well lately, quieter, that's why I went there. I wanted to talk about his treatment. We talked about our relationship, if I could help him at home, I mean, during my session.

I: Was there something that upset you during the session?

S: No, why? I was sad, it hasn't been easy at home.

I: Did your husband ever talk about his sessions with X?

S: No.

I: They met quite often, X and you husband. Have you ever suspected that their relationship was more than therapeutic?

S: No. That they had an affair or what? No. Is someone saying they did?

I: I only meant that it wouldn't be strange if you got jealous. He talked to X, not to you. Anyone would react to that.

S: I'm not sure I understand...

I: Have you met X beside what you told us now?

S: No.

I: Okay. I would like to talk more about your whereabouts before you came to the apartment. Start at the beginning, you wake up... what happens then?

The interrogation continues....